

APPENDIX 1: UTILITIES

LUE Assumptions per Land Use Type

City of Austin Water and wastewater Utility LUE Criteria
(effective date: February 7, 1986)

Definition: A living unit equivalent (LUE) is defined as the typical flow that would be produced by a single family residence (SFR) located in a typical subdivision. For water, this includes consumptive uses, such as lawn watering and evaporative coolers. The wastewater system does not receive all of these flows, so the flows expected differ between water and wastewater. The number of LUE's for a project are constant; only the water and wastewater flows are different.

One LUE produces: 2.2 GPM (Peak Hour) of water flow
1.3 GPM (Peak Day) of water flow
350 GPD (0.243 G.P.M.) average dry weather flow

Peak flow factor formula: $PF = \frac{18 + [0.0144(F)]^{0.5}}{4 + [0.0144(F)]^{0.5}}$ F = Average Flow (GPM)

Land Use	LUE Conversion
Residential	
One (1) Single Family Residence; Modular Home; Mobile Home	1 LUE
One (1) Duplex	2 LUE
One (1) Triplex, Fourplex; Condo Unit; P.U.D. Unit (6+ Units/Acre to 24 Units/Acre)	0.7 LUE/Unit
One (1) apartment Unit (24+ Units/Acre)	0.5 LUE/Unit
One (1) Hotel or Motel Room	0.5 LUE/Unit
Commercial	
Office	1 LUE/3,000 Sq.Ft. of Floor
Office Warehouse	1 LUE/4,000 Sq. Ft. of Floor
Retail; Shopping Center	1 LUE/1,660 Sq. Ft. of Floor
Restaurant; Cafeteria	1 LUE/200 Sq. Ft. of Floor
Hospital	1 LUE/Bed
Rest Home	1 LUE/2 Beds
Church (Worship Services Only)	1 LUE/70 Seats
High School (Includes Gym and Cafeteria)	1 LUE/13 Students
Elementary School (Includes Gym and Cafeteria)	1 LUE/15 Students

The following additional LUE Conversion factors were used in cases where the North Burnet/Gateway Plan proposes a land use not included in the City's LUE criteria list. These LUE conversion factors were generated by correlating them to an occupancy assuming one employee per 600 to 750 square feet.

Land Use	LUE Conversion
Commercial Services	1 LUE/3,500 Sq. Ft. of Floor
Industrial Space	1 LUE/4,000 Sq. Ft. of Floor

Burnet / Gateway Utility Cost Clarification Information

This Appendix includes information about the potential cost to install new utility infrastructure in response to potential future growth in the Burnet/Gateway corridor. The entire planning study is conceptual in nature; therefore the cost estimates are also conceptual with ample “contingency” factors. The land use mixes and boundaries are the best estimates available at this time. This is not a “traditional” infrastructure impact study where the footprints of the actual developments are known in more detail. Therefore, it is important for the reader to realize that the related cost estimates of the future infrastructure needs presented in this Appendix also come with some limitations and assumptions.

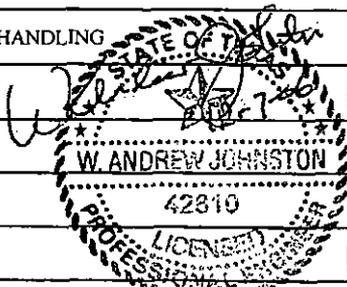
For example, based upon the general LUE loadings presented in the body of the report, certain general areas of the Study Area tended to show more capacity limitations than others. A map has been prepared showing the general clouded regions of the Study Area (instead of specific line lengths) that display an inability to support the future demand without violating an existing City of Austin design code. For example, the velocity in the water line should be at or below five feet per second (fps). As the future LUE demands are placed on the water model, certain portions of the Study Area have a large percentage of lines that exceed five fps. These areas have been clouded on the map. There is not enough specific information available at this time to know for sure just which lines could need to be replaced and for what length.

After community review of this planning document, it is strongly recommended that the current conceptual design be refined and a more traditional “planning model” be prepared for both the water and wastewater systems. It is strongly recommended that the Austin Fire Department (AFD) have input as to the fire flow demands that may be required for the commercial and high-rise residential areas. After this *traditional* modeling effort has been completed, then a much more specific map of targeted infrastructure lines and project costs can be prepared. It is strongly recommended that members of the Austin Water Utility (AWU) Systems Planning Division be allowed to review these models on an annual basis in an effort to reflect actual past development and short term planned development, in an effort to accurately reflect the long range needs.

Please note that both the water and wastewater cost estimates reflect the larger diameter transmission lines only. Please note that existing 14” diameter water lines will most likely be replaced with 16” diameter lines. No provisions were made on the “trunk line” cost estimate list for any dead end lines that may evolve due to a certain development layout.

Included in the construction cost estimate for new *roadways* are the local distribution and collection lines. Should an existing roadway be slated for widening, the cost to rehabilitate or upsize the existing water and wastewater lines has been included in the *roadway* costs. Should an existing roadway be proposed to be a divided roadway, the cost of a new parallel transmission line would be added at that time.

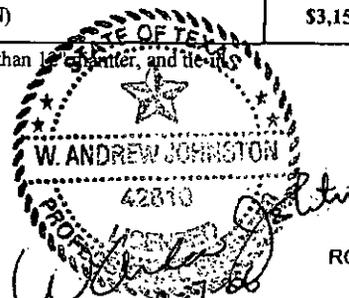
ENGINEER'S OPINION OF PROBABLE COSTS - CONCEPTUAL DESIGN BURNET / GATEWAY - FUTURE CONDITIONS - WATER SYSTEM					DATE:	12/7/06
					BY:	A3
					JOB:	772
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL	
101S-C	PREPARING RIGHT-OF-WAY (general)	39,772	LF	\$1.00	\$39,772	
340S	HMAC STREET REPAIRS (2" Type C including 10" base), complete, in place	34,978	SY	\$40.00	\$1,399,109	
430S	P.C. CONCRETE CURB AND GUTTER (remove and replace)	597	LF	\$18.00	\$10,738	
432S	P.C. CONCRETE SIDEWALK (4" thick, remove and replace)	4,773	SF	\$10.00	\$47,726	
433S	P.C. CONCRETE DRIVEWAY (standard residential, remove and replace)	11,932	SF	\$15.00	\$178,974	
509S	TRENCH SAFETY SYSTEMS	39,772	LF	\$3.00	\$119,316	
510-A	PIPE, 14" DI, class 250 (all depths, including excavation and backfill)	17,236	LF	\$90.00	\$1,551,204	
510-A	PIPE, 16" DI, class 250 (all depths, including excavation and backfill)	2,144	LF	\$115.00	\$246,608	
510-A	PIPE, 24" DI, class 250 (all depths, including excavation and backfill)	7,109	LF	\$145.00	\$1,030,866	
510-A	PIPE, 30" DI, class 250 (all depths, including excavation and backfill)	2,833	LF	\$160.00	\$453,224	
510-A	PIPE, 36" DI, class 250 (all depths, including excavation and backfill)	1,604	LF	\$200.00	\$320,748	
510-A	PIPE, 42" DI, class 250 (all depths, including excavation and backfill) ¹	4,216	LF	\$230.00	\$969,597	
510-A	PIPE, 54" DI, class 250 (all depths, including excavation and backfill) ¹	4,630	LF	\$275.00	\$1,273,368	
510-X	DUCTILE IRON FITTINGS (14" TO 54")	5	TON	\$8,000.00	\$40,000	
602S	SODDING FOR EROSION CONTROL	133	SY	\$8.00	\$1,061	
609S-E	EXTENDED IRRIGATION	3	EA	\$500.00	\$1,500	
609S-G	INTEGRATED PEST MANAGEMENT	3	EA	\$500.00	\$1,500	
610S-A	PROTECTIVE TREE FENCING -CHAIN LINK	2,983	LF	\$6.00	\$17,897	
632S	STORM INLET SEDIMENT TRAP	199	EA	\$120.00	\$23,863	
802S	PROJECT SIGNS	1	LS	\$500.00	\$500	
803S-MO	BARRICADES, SIGNS AND TRAFFIC HANDLING	3	MO	\$15,000.00	\$45,000	
	UTILITY RELOCATION (assumption)	1	LS	\$50,000.00	\$50,000	
700S-TM	MOBILIZATION (assume 4%)	1	LS	\$312,902.85	\$312,903	
				UNIT PRICE TOTAL		\$8,135,474
				25% CONTINGENCY		\$2,033,869
TOTAL ESTIMATED CONSTRUCTION COST (CONCEPTUAL DESIGN)					\$10,169,300	



¹ These larger diameter lines may not need to be installed since the other upsizing may reduce the system velocity in the mains

ENGINEER'S OPINION OF PROBABLE COSTS - CONCEPTUAL DESIGN BURNET / GATEWAY - FUTURE CONDITIONS - WASTEWATER SYSTEM					DATE:	12/7/06
					BY:	AJ
					JOB:	772
ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL	
101S-C	PREPARING RIGHT-OF-WAY (general)	4,300	LF	\$1.00	\$4,300	
340S	HMAC STREET REPAIRS (2" Type C including 10" base), complete, in place	3,200	SY	\$40.00	\$128,000	
430S	P.C. CONCRETE CURB AND GUTTER (remove and replace)	95	LF	\$18.00	\$1,701	
432S	P.C. CONCRETE SIDEWALK (4" thick, remove and replace)	756	SF	\$10.00	\$7,560	
433S	P.C. CONCRETE DRIVEWAY (standard residential, remove and replace)	1,890	SF	\$15.00	\$28,350	
501S-WW	JACKING OR BORING 27 in. PIPE (complete and in place)	550	LF	\$1,000.00	\$550,000	
501S-BP	BORE PIT - ENTRY AND EXIT (complete and in place, incl. special shoring)	2	EA	\$50,000.00	\$100,000	
506S-MWW	NEW MANHOLE, 48 in DIA. (complete and in place)	12	EA	\$10,000.00	\$120,000	
509S	TRENCH SAFETY SYSTEMS	6,300	LF	\$3.00	\$18,900	
510-AWW	PIPE, 12" PVC SDR-26 (all depths, including excavation and backfill)	2,000	LF	\$190.00	\$380,000	
510-AWW	PIPE, 15" PVC SDR-26 (all depths, including excavation and backfill)	3,200	LF	\$220.00	\$704,000	
510-AWW	PIPE, 18" PVC SDR-26 (all depths, including excavation and backfill)	1,100	LF	\$250.00	\$275,000	
602S	SODDING FOR EROSION CONTROL	21	SY	\$8.00	\$168	
609S-E	EXTENDED IRRIGATION	3	EA	\$500.00	\$1,500	
609S-G	INTEGRATED PEST MANAGEMENT	3	EA	\$500.00	\$1,500	
610S-A	PROTECTIVE TREE FENCING -CHAIN LINK	473	LF	\$6.00	\$2,835	
632S	STORM INLET SEDIMENT TRAP	32	EA	\$120.00	\$3,780	
802S	PROJECT SIGNS	1	LS	\$500.00	\$500	
803S-MO	BARRICADES, SIGNS AND TRAFFIC HANDLING	3	MO	\$15,000.00	\$45,000	
	UTILITY RELOCATION (assumption)	1	LS	\$50,000.00	\$50,000	
700S-TM	MOBILIZATION (assume 4%)	1	LS	\$96,923.76	\$96,924	
				UNIT PRICE TOTAL		\$2,520,018
				25% CONTINGENCY		\$630,004
TOTAL ESTIMATED CONSTRUCTION COST (CONCEPTUAL DESIGN)					\$3,150,000	

¹ This is a rough cost estimate for major pipelines and does not include wastewater pipes less than 12" diameter, and tie-ins connections with major existing lines



this xls information was harvested by Jeff Fox from the "FUTURE" conditions water model
 it presents a list of water pipe LENGTHS that had velocities exceed 5 fps (whereas before it was under 5 fps)
 original list resorted to group pipe DIAMETERS

use Q=V*A to estimate a larger diameter req'd to reduce the VEL

note = as the water pipe infrastructure fills in the area, the velocities could also go down (not just due to pipe upsizing)

ID	FROM	TO	L (ft)	DIAM	C	FLOW	VEL (fps)	PIPE AREA (sq ft)	Q = V*A (cfs)	Assume V (fps)	Calc pipe area	Calc pipe dia (in)	Upsized pipe dia.	QUANTITY SUMMARY
79089	95402	96102	415.98	12	75	2,127.79	6.04	0.79	4.7	5.0	0.95	13.2	14	17,236
79080	95159	95365	135.77	12	75	2,127.79	6.04	0.79	4.7	5.0	0.95	13.2	14	2,144
78877	95159	93011	1,581.47	12	75	-2,129.46	6.04	0.79	4.7	5.0	0.95	13.2	14	4,398
78716	92209	91893	335.63	12	75	2,400.78	6.81	0.79	5.3	5.0	1.07	14.0	20	43
78776	92629	92209	321	12	75	2,400.78	6.81	0.79	5.3	5.0	1.07	14.0	20	2,668
78776	92629	92209	321	12	75	2,400.78	6.81	0.79	5.3	5.0	1.07	14.0	20	2,833
78122	88245	88249	71.54	12	75	2,072.78	5.88	0.79	4.6	5.0	0.92	13.0	14	1,604
78112	88224	88245	214.9	12	75	2,176.19	6.17	0.79	4.8	5.0	0.97	13.3	14	1,604
78091	88127	88152	96.3	12	75	2,387.99	6.77	0.79	5.3	5.0	1.06	14.0	14	4,216
78084	88127	88101	77.22	12	75	-2,360.45	6.7	0.79	5.3	5.0	1.05	13.9	14	4,630
78067	88101	88010	323.63	12	75	-2,360.45	6.7	0.79	5.3	5.0	1.05	13.9	14	39,772
78048	88010	87876	256.89	12	75	-2,360.45	6.7	0.79	5.3	5.0	1.05	13.9	14	
78037	87876	87790	182.17	12	75	-2,360.45	6.7	0.79	5.3	5.0	1.05	13.9	14	
78053	88062	87922	318.34	12	75	-2,298.75	6.52	0.79	5.1	5.0	1.02	13.7	14	
78078	88062	88154	307.95	12	75	2,298.75	6.52	0.79	5.1	5.0	1.02	13.7	14	
78109	88203	88234	72.42	12	75	2,298.75	6.52	0.79	5.1	5.0	1.02	13.7	14	
78100	88154	88203	145.09	12	75	2,298.75	6.52	0.79	5.1	5.0	1.02	13.7	14	
78136	88332	88355	179.78	12	75	2,269.00	6.44	0.79	5.1	5.0	1.01	13.6	14	
78118	88234	88328	335.16	12	75	2,271.21	6.44	0.79	5.1	5.0	1.01	13.6	14	
78098	88152	88224	234.86	12	75	2,387.99	6.77	0.79	5.3	5.0	1.06	14.0	14	
78136	88332	88355	179.78	12	75	2,269.00	6.44	0.79	5.1	5.0	1.01	13.6	14	
78133	88328	88332	47.68	12	75	2,269.00	6.44	0.79	5.1	5.0	1.01	13.6	14	
78095	88249	88139	539.7	12	75	2,072.78	5.88	0.79	4.6	5.0	0.92	13.0	14	
78130	88353	88289	587.15	12	75	2,072.78	5.73	0.79	4.5	5.0	0.90	12.8	14	
77848	85914	86066	281.66	12	75	1,984.56	5.63	0.79	4.4	5.0	0.88	12.7	14	
77883	86468	87077	767.48	12	75	1,984.56	5.63	0.79	4.4	5.0	0.88	12.7	14	
77878	86320	86468	274.72	12	75	1,984.56	5.63	0.79	4.4	5.0	0.88	12.7	14	
77854	86066	86320	466	12	75	-1,819.36	5.16	0.79	4.4	5.0	0.88	12.7	14	
77948	87264	87077	164.59	12	75	1,819.36	5.16	0.79	4.1	5.0	0.81	12.2	14	
77966	87264	87914	573.41	12	75	1,819.36	5.16	0.79	4.1	5.0	0.81	12.2	14	
78058	87941	87990	58.14	12	75	2,051.10	5.82	0.79	4.6	5.0	0.91	12.9	14	
78069	88022	88673	762.65	12	75	2,412.24	6.84	0.79	5.4	5.0	1.07	14.0	14	
78211	88697	89098	261.53	12	75	1,765.02	5.01	0.79	3.9	5.0	0.79	12.0	14	
78205	88673	89098	571.71	12	75	2,412.24	6.84	0.79	5.4	5.0	1.07	14.0	14	
77906	87142	86767	249.51	12	75	-2,383.69	6.76	0.79	5.3	5.0	1.06	14.0	14	
77852	86767	85990	660.15	12	75	-2,383.69	6.76	0.79	5.3	5.0	1.06	14.0	14	
78800	92439	92588	119.85	12	75	2,163.20	6.14	0.79	4.8	5.0	0.96	13.3	14	
78797	92389	92507	231.02	12	75	2,205.12	6.26	0.79	4.9	5.0	0.98	13.4	14	
78788	92330	92389	107.15	12	75	2,205.12	6.26	0.79	4.9	5.0	0.98	13.4	14	
78754	92110	92330	516.7	12	75	2,303.44	6.53	0.79	5.1	5.0	1.03	13.7	14	
78749	92086	92110	44.98	12	75	2,303.44	6.53	0.79	5.1	5.0	1.03	13.7	14	
78715	91893	92086	489.41	12	75	2,303.44	6.53	0.79	5.1	5.0	1.03	13.7	14	
78416	90325	90476	157	12	75	2,260.90	6.41	0.79	5.0	5.0	1.01	13.6	14	
78449	91349	90507	765.58	12	75	-2,213.21	6.28	0.79	4.9	5.0	0.99	13.4	14	
78602	91349	92439	921.97	12	75	2,163.20	6.14	0.79	4.8	5.0	0.96	13.3	14	
78190	88566	90325	1,488.98	14	75	2,437.42	5.08	1.07	5.4	5.0	1.09	14.1	14	
78863	92907	93011	1,505.68	12	75	3,001.57	8.51	0.79	6.7	5.0	1.34	15.7	16	

78861	92894	92907	12	75	3,001.57	8.51	0.79	6.7	5.0	1.34	15.7	16
78398	90508	90221	12	75	-2,590.72	7.35	0.79	5.8	5.0	1.15	14.5	16
78358	90221	90064	12	75	-2,590.72	7.35	0.79	5.8	5.0	1.15	14.5	16
78335	90064	89927	12	75	-2,590.72	7.35	0.79	5.8	5.0	1.15	14.5	16
78305	89927	89613	12	75	-2,590.72	7.35	0.79	5.8	5.0	1.15	14.5	16
78298	89613	89559	12	75	-2,590.72	7.35	0.79	5.8	5.0	1.15	14.5	16
78288	89491	89559	12	75	3,016.43	8.56	0.79	6.7	5.0	1.34	15.7	16
78270	89355	89491	12	75	3,016.43	8.56	0.79	6.7	5.0	1.34	15.7	16
78243	89116	89355	12	75	3,016.43	8.56	0.79	6.7	5.0	1.34	15.7	16
75570	80278	80654	12	75	2,844.46	8.07	0.79	6.3	5.0	1.27	15.2	16
77716	92209	91893	12	75	3,209.94	9.11	0.79	7.2	5.0	1.43	16.2	18
77684	82081	84372	16	80	3,546.79	5.66	1.40	7.9	5.0	1.58	17.0	18
75591	80569	81157	16	80	3,834.03	6.12	1.40	8.5	5.0	1.71	17.7	18
75589	80513	80569	16	80	3,834.03	6.12	1.40	8.5	5.0	1.71	17.7	18
75753	83684	84046	16	80	3,188.61	5.09	1.40	7.1	5.0	1.42	16.1	18
75744	83540	83684	16	80	3,188.61	5.09	1.40	7.1	5.0	1.42	16.1	18
75730	83245	83540	16	80	3,188.61	5.09	1.40	7.1	5.0	1.42	16.1	18
77683	82081	82085	12	75	-4,050.31	11.49	0.79	9.0	5.0	1.80	18.2	20
107836	82624	83226	16	80	6,351.00	10.13	1.40	14.1	5.0	2.83	22.8	24
107835	82824	82491	16	80	-6,351.00	10.13	1.40	14.1	5.0	2.83	22.8	24
75599	80882	81167	24	80	7,164.55	5.08	3.14	16.0	5.0	3.19	24.2	24
75595	80648	80882	24	80	7,164.55	5.08	3.14	16.0	5.0	3.19	24.2	24
75588	80510	80648	24	80	7,164.55	5.08	3.14	16.0	5.0	3.19	24.2	24
107826	81692	82101	24	80	7,162.43	5.08	3.14	16.0	5.0	3.19	24.2	24
107819	81416	81692	24	80	7,164.55	5.08	3.14	16.0	5.0	3.19	24.2	24
107814	81167	81416	24	80	7,164.55	5.08	3.14	16.0	5.0	3.19	24.2	24
78620	92822	91424	24	80	-8,591.00	6.09	3.14	19.1	5.0	3.83	26.5	30
78591	91424	91277	24	80	-10,669.34	7.57	3.14	23.8	5.0	4.76	29.5	30
75587	80513	80510	24	80	9,295.25	6.59	3.14	20.7	5.0	4.14	27.6	30
78635	91584	91494	24	80	-12,209.38	8.66	3.14	27.2	5.0	5.44	31.6	36
78582	91494	91248	24	80	-12,209.38	8.66	3.14	27.2	5.0	5.44	31.6	36
75541	79669	80513	24	80	13,415.03	9.51	3.14	29.9	5.0	5.98	33.1	36
75523	79438	79669	24	80	13,558.19	9.62	3.14	30.2	5.0	6.04	33.3	36
77905	86748	86867	36	80	18,519.12	5.84	7.07	41.3	5.0	8.26	38.9	42
77851	86867	86052	36	80	17,720.63	5.59	7.07	39.5	5.0	7.90	38.1	42
77846	86997	85912	36	80	-17,720.63	5.59	7.07	39.5	5.0	7.90	38.1	42
77905	86748	86867	36	80	18,519.12	5.84	7.07	41.3	5.0	8.26	38.9	42
77851	86867	86052	36	80	17,720.63	5.59	7.07	39.5	5.0	7.90	38.1	42
75477	78667	79438	48	80	37,240.14	6.6	12.57	82.9	5.0	16.59	55.1	54
75146	74477	78575	48	80	36,729.46	6.51	12.57	81.8	5.0	16.36	54.8	54
78126	88275	88697	12	75	1,765.02	5.01	0.79	3.9	5.0	0.79	12.0	12
78071	88037	88225	12	75	1,765.02	5.01	0.79	3.9	5.0	0.79	12.0	12
78047	88037	87873	12	75	-1,765.02	5.01	0.79	3.9	5.0	0.79	12.0	12
78016	87630	87873	12	75	1,765.02	5.01	0.79	3.9	5.0	0.79	12.0	12
78002	87546	87630	12	75	1,765.02	5.01	0.79	3.9	5.0	0.79	12.0	12
77972	87335	87546	12	75	1,765.02	5.01	0.79	3.9	5.0	0.79	12.0	12

APPENDIX 2: TRAFFIC ANALYSIS

NORTH BURNET GATEWAY

<LAND USE AND TRANSPORTATION PLAN>

<TRANSPORTATION ANALYSIS>

July 28, 2007

NORTH BURNET GATEWAY

<LAND USE AND TRANSPORTATION PLAN>
<TRANSPORTATION ANALYSIS>

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7/28/07

July 28, 2007

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North Burnet Gateway

<Transportation Analysis>

The North Burnet-Gateway area is being studied to redevelop as a high density, multi-modal, transit-oriented development. The purpose of this study is to analyze the impact to the study area's roadway network for this type of development. Figure 1 shows the study area, which is bound on the south and west by US 183, north by Gracy Farms Lane and east by Metric Boulevard.

ANALYSIS APPROACH

To determine the existing traffic flow in and around the study area, PM peak hour traffic counts were conducted at the signalized intersections within the study area. Existing land use estimates were obtained from the City, and these uses were organized into traffic zones. Then trips were generated for each zone, based on the ITE Trip Generation Manual (Ref 1). The PM peak hour traffic was then distributed throughout the study area network, assuming the existing distribution determined by the existing counts. To estimate the regional traffic traveling through the study area, the existing land use traffic was then removed from the existing counts. A growth rate of 1.85%, based on 2006 counts and CAMPO 2030 forecasted counts, was applied to existing through traffic to calculate the 2035 forecasted through traffic. The forecasted through traffic, traffic generated by the existing uses and six approved developments Arbor Walk, Austin Commons, Endeavor, Multek, Domain and Whole Foods were combined to provide the 2035 Conventional Scenario.

The study area was split into 34 traffic analysis zones (TAZs) to evenly distribute the generated traffic. The zone sizes and boundaries were based on street configuration, the rail line, and environmental features. Figure 2 shows the division of these TAZs throughout the study area. Notable zones near the intersections of Mopac/Braker Rd. and Burnet Rd./Braker Rd. are:

- Zone 6 – Whole Foods
- Zone 7 – Arbor Walk development
- Zone 10 – Domain-Multek development
- Zone 11 – Domain-Endeavor development
- Zone 12 – UT Pickle research campus

The Transit-Oriented Development (TOD) Scenario was developed by using proposed land uses and densities provided by Carter & Burgess, Inc. This development was provided in five land use mix districts. The proposed uses in the districts were divided into six land use categories to

North Burnet Gateway

<Transportation Analysis>

calculate the PM peak hour generated trips. The land use categories are commercial mixed use, commercial industrial, neighborhood mixed use, warehouse mixed use, neighborhood residential and UT Pickle Campus. The study area districts were broken down into the same zone structure as the existing zones to calculate trips and distribute traffic.

The location (near train stations), type of use, mix of uses and density were factors in determining appropriate levels of trip reduction to account for alternative travel modes, such as walking, biking and transit. The resulting trips were distributed throughout the network based on the historical trends. This traffic was combined with the forecasted through traffic to provide the 2035 TOD Scenario.

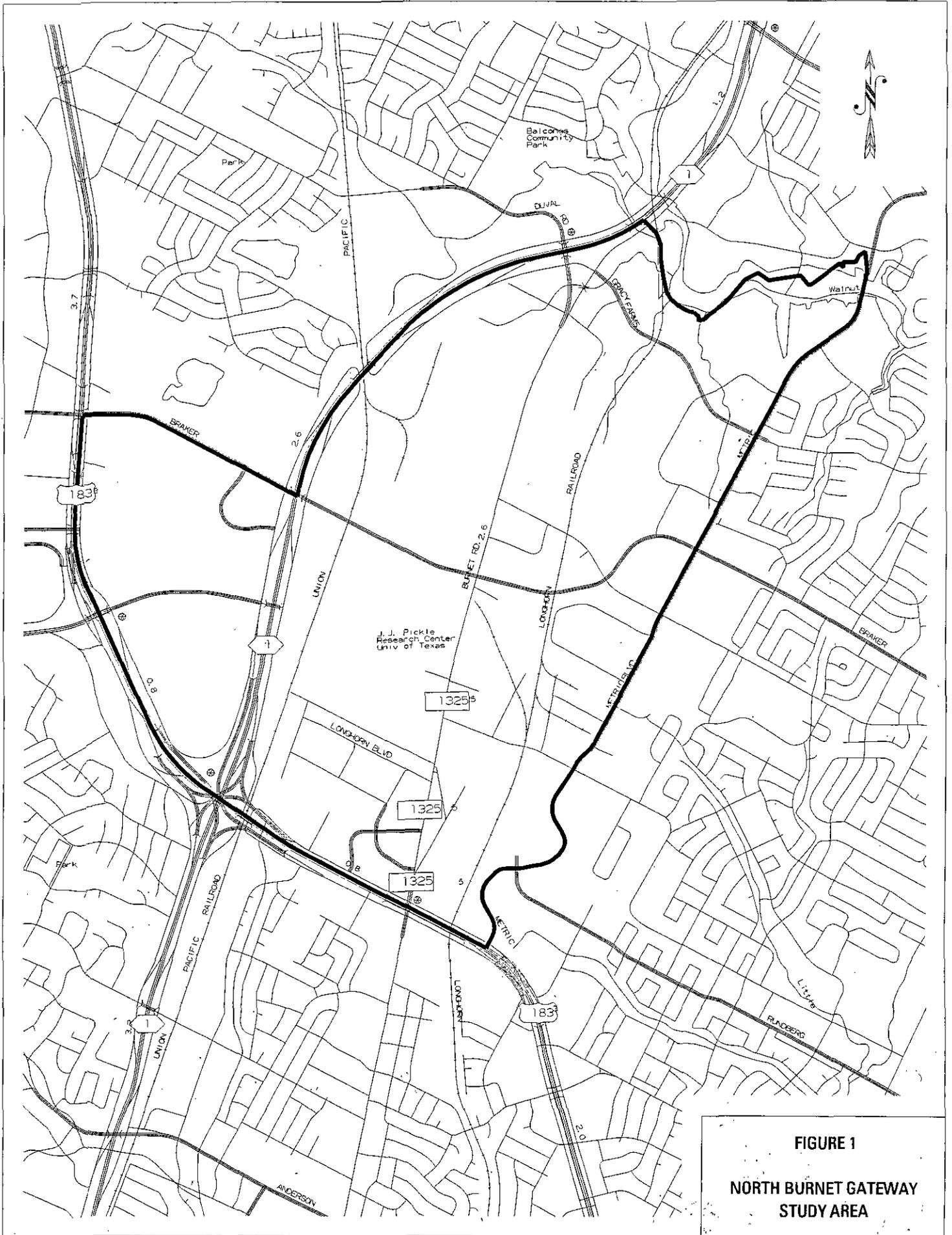


FIGURE 1
NORTH BURNET GATEWAY
STUDY AREA

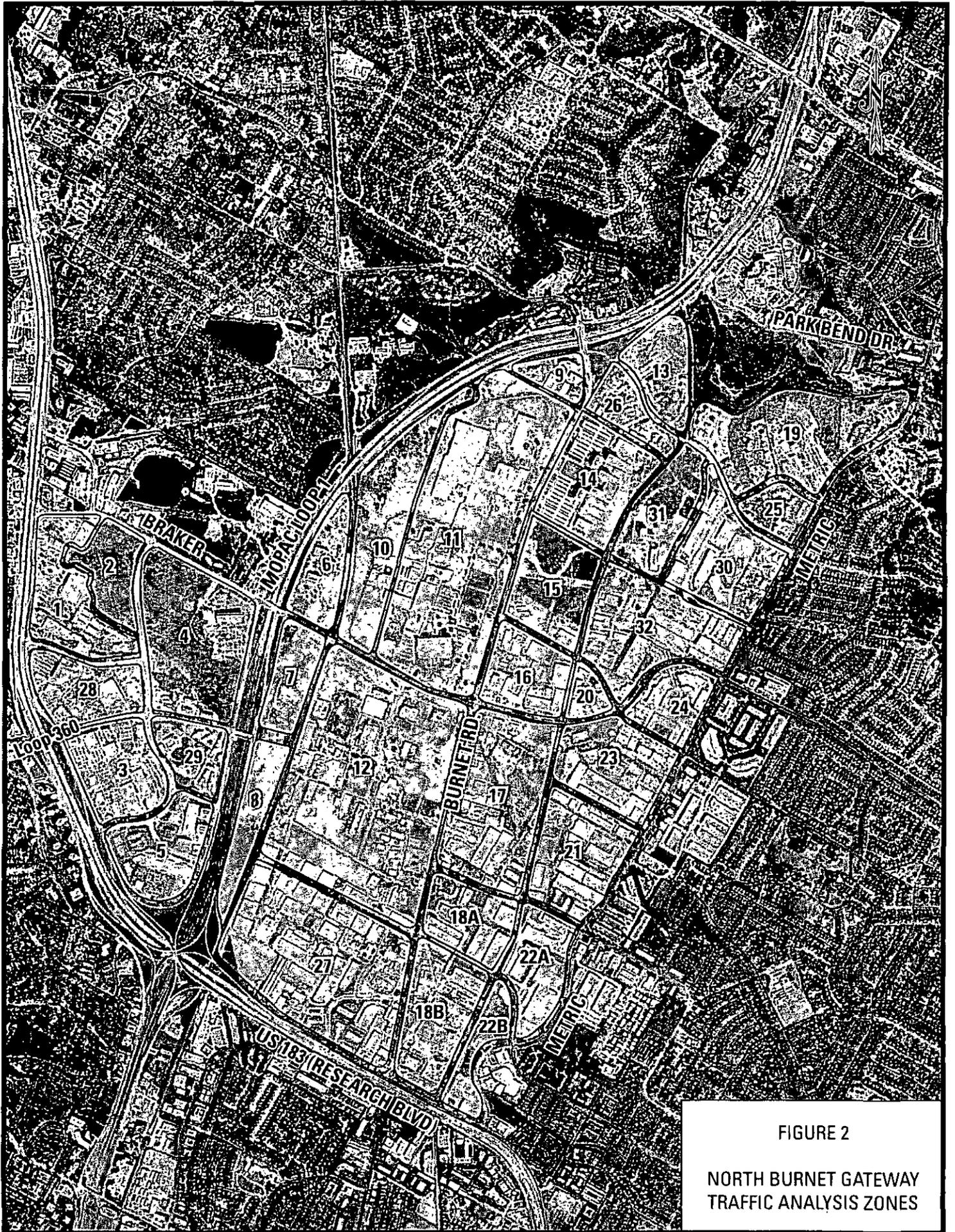


FIGURE 2
NORTH BURNET GATEWAY
TRAFFIC ANALYSIS ZONES

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TRIP GENERATION

Based on the existing land uses and six approved developments the total traffic generated for the Conventional Scenario is approximately 12,307 and 18,265 for entering and exiting, respectively during the PM peak hour. The traffic generated by the approved developments was obtained from the approved traffic impact analyses for each development. The PM peak hour traffic generated by these developments was estimated assuming trip reductions for internal capture, pass-by trips, and transit.

According to recommendations and survey data contained in the Institute of Transportation Engineers (ITE) Trip Generation (Ref 2), the proposed land uses for the TOD Scenario will generate approximately 69,543 unadjusted PM peak hour trips. Table 1 provides a detailed summary of traffic production, which is directly related to the proposed land uses. Based on the land use mixes proposed in the TOD scenario, the trip generation for each land use type was split equally by zone area to each of the TAZs.

Table 1.
Summary of Unadjusted PM Peak Hour Trip Generation for TOD Scenario

Land Use	PM Peak Hour	
	Enter	Exit
Residential	11,662	5,972
Retail	10,928	11,839
Employment	2,762	13,486
Industrial	326	2,391
Commercial	1,066	3,568
Hotel	2,350	2,084
Education	444	664
Total	29,538	40,005

Trip Reduction Measures

As previously discussed, the location, mix of uses and density all impact the potential shift from auto to other travel modes, such as walking, biking and transit. For the retail uses along US 183, its location lends itself to absorbing pass-by trips, which are trips already on the road and diverting into the retail area to shop and then proceed on US 183 in the same direction as before it diverted. The classic example is someone stopping to shop on the way home from work. For this analysis, a reduction of 34 percent, based on the ITE Trip Generation Handbook (Ref 3), was applied to the US 183 retail uses.

North Burnet Gateway

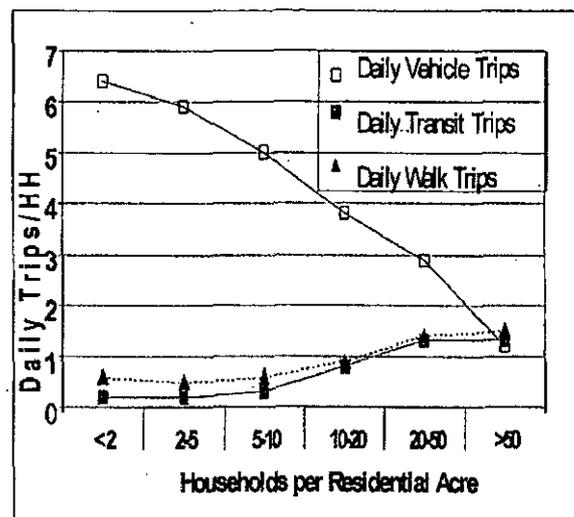
<Transportation Analysis>

The mix of uses can affect the internal synergy of a zone and study area. According to the ITE Trip Generation Handbook, a well balanced mix of uses, such as retail, residential and office included in a zone will have higher internal interaction or synergy than say a zone with just office and residential. This interaction accounts for pedestrian trips and shared vehicle trips within a zone. Applying the ITE methodology, the internal reduction by zone will range from zero to 31 percent, with and overall reduction of 21 percent.

Also, certain uses are more conducive to transit usage than others, such as office which attracts more transit ridership than industrial uses. Both rail and bus transit was considered in determining the appropriate auto trip reduction. With respect to rail ridership, the proximity of the uses to the rail station (within 1,500 feet) was considered in the trip reduction for rail. This reduction reflected the travel mode shift from auto to pedestrian and transit. This analysis was conducted around each of the three rails stations within the study area. In addition to the rail reduction, a reduction was applied to account for regional busing that would have stops in the study area. The approach discussed in the ITE Trip Generation Handbook was utilized in calculating the appropriate reduction for each use. As a result the overall regional transit reduction applied in this analysis was 21 percent. To account for local bus transit, the internal synergy methodology was applied for the total study area, and this resulted in a reduction of 14 percent.

In an analysis of travel data for communities in the San Francisco Bay area, the Metropolitan Transportation Commission identified key relationships between residential density and travel behavior, as shown in Figure 3. This analysis is documented in the Statewide Transit-Oriented Development Study, prepared by the California Department of Transportation (CalTrans) (Ref 4). The proposed residential density for the North Burnet Gateway study area is just under 20 units to the acre, so by applying the

Figure 3.
Density and Travel Behavior



North Burnet Gateway

<Transportation Analysis>

trip reductions measures stated above, the resulting residential trip mode split is consistent with Figure 3.

Assuming the pass-by reduction, internal capture and transit reductions discuss above, the overall auto trip reduction for the study area will be 50 percent. As a result, the adjusted PM peak hour trips for the TOD Scenario will be 35,083, as shown in Table 2. The TOD Scenario will generate just less than 15 percent more trips (4,500 vph) than the Conventional Scenario.

Table 2.
Summary of Adjusted PM Peak Hour Trip Generation for TOD Scenario

Land Use	PM Peak Hour	
	Enter	Exit
Residential	5,568	3,154
Retail	3,609	3,615
Employment	1,333	8,546
Industrial	46	1,375
Commercial	551	2,578
Hotel	1,906	1,695
Education	444	664
Total	13,456	21,627

TRIP DISTRIBUTION

The TOD Scenario traffic was distributed throughout the roadway network assuming a traffic distribution that was based on the percentage of the total traffic entering and exiting the network from each possible access point. For example, if the existing traffic counts show that approximately 5 percent of the total traffic entered the study area by traveling eastbound on Braker Lane then 5 percent of the calculated trip generation was distributed to enter the study area by traveling eastbound on Braker Lane. Each zone was analyzed to determine the most efficient way to enter and exit the site based on the overall distribution of traffic described above.

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EXISTING AND FUTURE THOROUGHFARE SYSTEM

Freeways

MoPac (Loop 1) – The Capital Area Metropolitan Planning Organization (CAMPO) 2030 Transportation Plan (Ref 5) classifies MoPac as a six-lane freeway with frontage roads in the vicinity of the site. The plan shows MoPac will be upgraded to a six-lane freeway with two managed lanes by 2030. Traffic volume provided by 2005 TxDOT Traffic Maps (Ref 6) for MoPac near Burnet Road was approximately 122,330 vehicles per day (vpd).

US 183 – The Capital Area Metropolitan Planning Organization (CAMPO) 2030 Transportation Plan classifies US 183 as a six-lane freeway with frontage roads in the vicinity of the site. The plan shows US 183 will be upgraded to a six-lane freeway with two managed lanes by 2030. Traffic volume provided by 2005 TxDOT Traffic Maps for US 183 near MoPac was approximately 175,220 vehicles per day (vpd).

Arterials

Loop 360 – The Capital Area Metropolitan Planning Organization (CAMPO) 2030 Transportation Plan classifies Loop 360 as a six-lane divided arterial in the vicinity of the site. The plan shows Loop 360 to remain a six-lane divided arterial in 2030. Traffic volume provided by 2005 TxDOT Traffic Maps for Loop 360 west of US 183 was approximately 50,380 vehicles per day (vpd).

Braker Lane – The Capital Area Metropolitan Planning Organization (CAMPO) 2030 Transportation Plan classifies Braker Lane as a six-lane divided arterial in the vicinity of the site. The plan shows Braker Lane to remain a six-lane divided arterial in 2030. A traffic count performed on April 24, 2006 for Braker Lane east of Seton Center Parkway was approximately 30,260 vehicles per day (vpd).

Burnet Road – The Capital Area Metropolitan Planning Organization (CAMPO) 2030 Transportation Plan classifies Burnet Road as a four-lane divided arterial with a center turn lane in the vicinity of the site. The plan shows Burnet Road will be upgraded to a six-lane divided arterial in 2030. Traffic volume provided by 2005 TxDOT Traffic Maps for Burnet Road south of MoPac was approximately 19,220 vehicles per day (vpd).

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Metric Boulevard – The Capital Area Metropolitan Planning Organization (CAMPO) 2030 Transportation Plan classifies Metric Boulevard as a four-lane divided arterial in the vicinity of the site. The plan shows Metric Boulevard to remain a four-lane divided arterial in 2030 between Parmer Lane and Rutland Drive and will be upgraded to a six-lane divided arterial by 2030 between Rutland Drive and US 183. A traffic count performed on April 24, 2006 for Metric Boulevard south of Rutland Drive was approximately 11,543 vehicles per day (vpd).

OPERATIONAL ANALYSIS

The impact of the Conventional and TOD Scenarios on intersections located within the study area was analyzed for the horizon year 2035.

Signalized intersections within the study area were considered the locations of principal concern because they are the locations of highest traffic conflict and delay. The standard used to evaluate traffic conditions at intersections is level of service (LOS), which is a qualitative measure of the effect of a number of factors such as speed, volume of traffic, geometric features, traffic interruptions, freedom to maneuver, safety, driving comfort, convenience, and operating cost.

Signalized intersection LOS is defined in terms of delay, which is a direct and/or indirect measure of driver discomfort, frustration, fuel consumption, and lost travel time. The levels of service have been established based on driver acceptability of various delays. The delay for each approach lane group is calculated based on a number of factors including lane geometrics, percentage of trucks, peak hour factor, number of lanes, signal progression, volume, signal green time to total cycle time ratio, roadway grades, parking conditions, and pedestrian flows.

Because delay is a complex measure, its relationship to capacity is also complex. Analysis was performed using the microcomputer program "Synchro 6.0" by Trafficware (Ref. 7), which is based on the procedures contained in the Highway Capacity Manual (Ref. 8). In general, overall intersection levels of service A to D are typically deemed acceptable, while an overall LOS of E or F is unacceptable.

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<Transportation Analysis>

Conventional Scenario

The Conventional Scenario assumes that the existing land uses and developments recently approved by the City of Austin will remain in place until 2035. Two network improvements were assumed to be complete in this scenario, and are the following (See Figure 4):

- U-turns at the interchanges on Mo-Pac.
- Rundburg Lane Extension that will connect to Longhorn Boulevard and provide access to Burnet Road.

Table 4 shows the PM peak hour Level of Service (LOS) for the intersections under the Conventional Scenario.

Table 3.

Conventional Scenario Intersection PM Peak Hour Level of Service

Signalized Intersections	Level of Service
US 183 Northbound Frontage Road and Braker Lane	F
US 183 Southbound Frontage Road and Braker Lane	F
US 183 Northbound Frontage Road and Great Hills Trl	D
US 183 Southbound Frontage Road and Great Hills Trl	F
US 183 Northbound Frontage Road and Loop 360	F
US 183 Southbound Frontage Road and Loop 360	F
Seton Center Pkwy and Braker Lane	F
Stonelake Blvd and Braker Lane	F
Stonelake Blvd and Great Hills Trl	F
Sam's Drwy/Gateway Drwy and Loop 360	B
Stonelake Blvd and Loop 360	C
MoPac Loop 1 Northbound Frontage Road and Braker Lane	F
MoPac Loop 1 Southbound Frontage Road and Braker Lane	F
MoPac Loop 1 Northbound Frontage Road and Loop 360	F
MoPac Loop 1 Southbound Frontage Road and Loop 360	F
MoPac Loop 1 Northbound Frontage Road and Duval Road	F
MoPac Loop 1 Southbound Frontage Road and Duval Road	F
Burnet Road and Gault Lane	F
Burnet Road and Kramer Lane	F
Burnet Road and Braker Lane	F
Road A and Braker Lane	F

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Burnet Road and Rutland Drive	F
Burnet Road and Longhorn Blvd/Rundburg extension	F
US 183 Northbound Frontage Road and Burnet Road	F
US 183 Southbound Frontage Road and Burnet Road	F
Stone Hollow Drive and Gracy Farms Lane	B
Metric Blvd and Stone Hollow Drive	F
Metric Blvd and Gracy Farms Lane	D
Metric Blvd and Braker Lane	F
Braker Lane and Kramer Lane	F
Metric Blvd and Kramer Lane	D
Metric Blvd and Rutland Drive	C
Metric Blvd and Rundberg Lane	C

TOD Scenario

The TOD Scenario assumes that the study area will be redeveloped into a high density, multi-modal, transit-oriented area. Numerous network improvements were assumed to be completed by 2035 under this Scenario (See Figure 5). The goal of the improvements was to improve already congested locations by implementing additional access points to US 183 and Mopac frontage roads and to provide a street grid system for the proposed development. The new street system will have a street hierarchy to disperse the newly generated traffic more evenly to and from the arterials and freeways. The network improvements are as follows:

- Construct a direct connect between northbound US 183 and westbound Loop 360.
- Construct an interchange for Mo-Pac and Longhorn Boulevard.
- Construct Transit Road from Metric Boulevard to Mo-Pac.
- Construct Burnet Parallel Road from Rundburg Lane to Gracy Farms Lane
- Modify Duval Road from Mo-Pac to Burnet Road to allow two-way traffic.

Table 5 shows the PM peak hour Level of Service (LOS) for the intersections under the TOD Scenario.

North Burnet Gateway

<Transportation Analysis>

Table 4.
TOD Scenario Intersection PM Peak Hour Level of Service

Signalized Intersections	Level of Service
US 183 Northbound Frontage Road and Braker Lane	F
US 183 Southbound Frontage Road and Braker Lane	F
US 183 Northbound Frontage Road and Great Hills Trl	D
US 183 Southbound Frontage Road and Great Hills Trl	F
US 183 Northbound Frontage Road and Loop 360	F
US 183 Southbound Frontage Road and Loop 360	F
Seton Center Pkwy and Braker Lane	F
Stonelake Blvd and Braker Lane	F
Stonelake Blvd and Great Hills Trl	F
Sam's Drwy/Gateway Drwy and Loop 360	B
Stonelake Blvd and Loop 360	D
MoPac Loop 1 Northbound Frontage Road and Braker	F
MoPac Loop 1 Southbound Frontage Road and Braker	F
MoPac Loop 1 Northbound Frontage Road and Loop 360	F
MoPac Loop 1 Southbound Frontage Road and Loop 360	F
MoPac Loop 1 Northbound Frontage Road and Duval	F
MoPac Loop 1 Southbound Frontage Road and Duval	F
Burnet Road and Gracy Farms Lane	F
Burnet Road and Gault Lane	F
Burnet Road and Stone Hollow Drive Extension	C
Burnet Road and Kramer Lane	F
Burnet Road and Braker Lane	F
Road A and Braker Lane	C
Burnet Road and Rutland Drive	F
Burnet Road and Longhorn Blvd/Rundburg extension	F
US 183 Northbound Frontage Road and Burnet Road	F
US 183 Southbound Frontage Road and Burnet Road	F
Rail Alignment Road and Gracy Farms Lane	F
Rail Alignment Road and Stone Hollow Drive Extension	C
Rail Alignment Road and Kramer Road	B
Rail Alignment Road and Braker Lane	E
Rail Alignment Road and Rutland Drive	C
Rail Alignment Road and Rundberg Extension	C
Stone Hollow Drive and Gracy Farms Lane	F
Metric Blvd and Stone Hollow Drive	F

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Metric Blvd and Gracy Farms Lane	F
Braker Lane and Kramer Lane	F
Metric Blvd and Kramer Lane	E
Metric Blvd and Rutland Drive	D
Metric Blvd and Rundberg Lane	D

CONCLUSIONS

The North Burnet Gateway proposed land use and transportation plan will provide a high density, multi-modal, transit-oriented development. The proposed development will promote alternative modes of travel, such as rail, bus, bicycling and walking because of the well-mixed land uses within close proximity to one another. Separate studies by CalTrans and Parsons Brinkerhoff revealed that as population density increases so does transit use. Based on our analysis the number of trips the proposed development will generate is only half of the potential trips generated if this development was in a suburban, low-density type environment that did not promote a variety of non-vehicular modes of transportation. In addition, the study area's proximity to downtown Austin will reduce the trip length as compared its suburban counterpart.

Next steps that the City may take to further reduce the auto trips would be as follows:

- Develop Community Based Parking Requirements
- Refine Parking Regulations to limit the maximum number of spaces per square foot.
- Establish Transportation Demand Management programs that may include employer transit assistance, staggered work hours, car and van pools, bike racks and showers for biking.

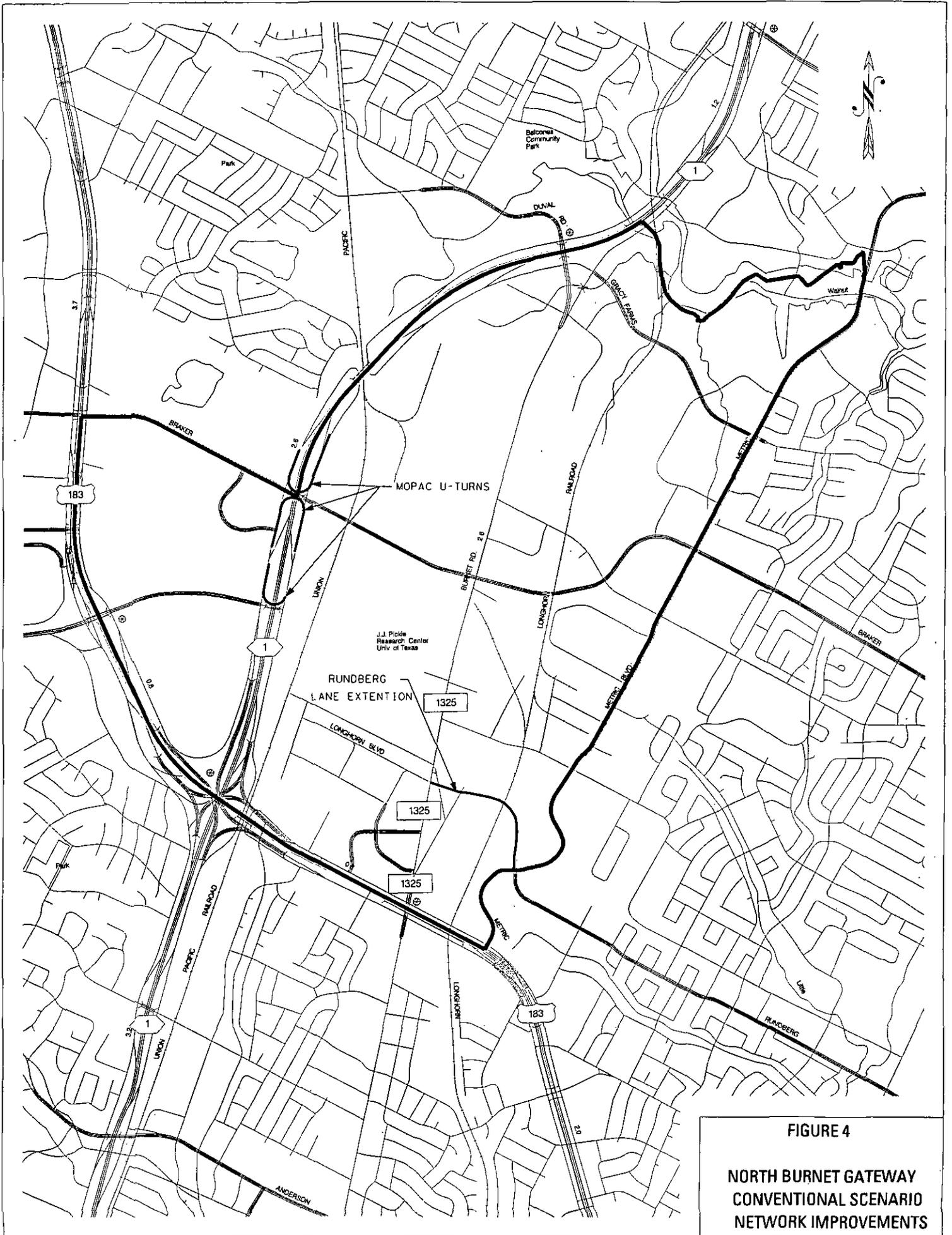


FIGURE 4
NORTH BURNET GATEWAY
CONVENTIONAL SCENARIO
NETWORK IMPROVEMENTS

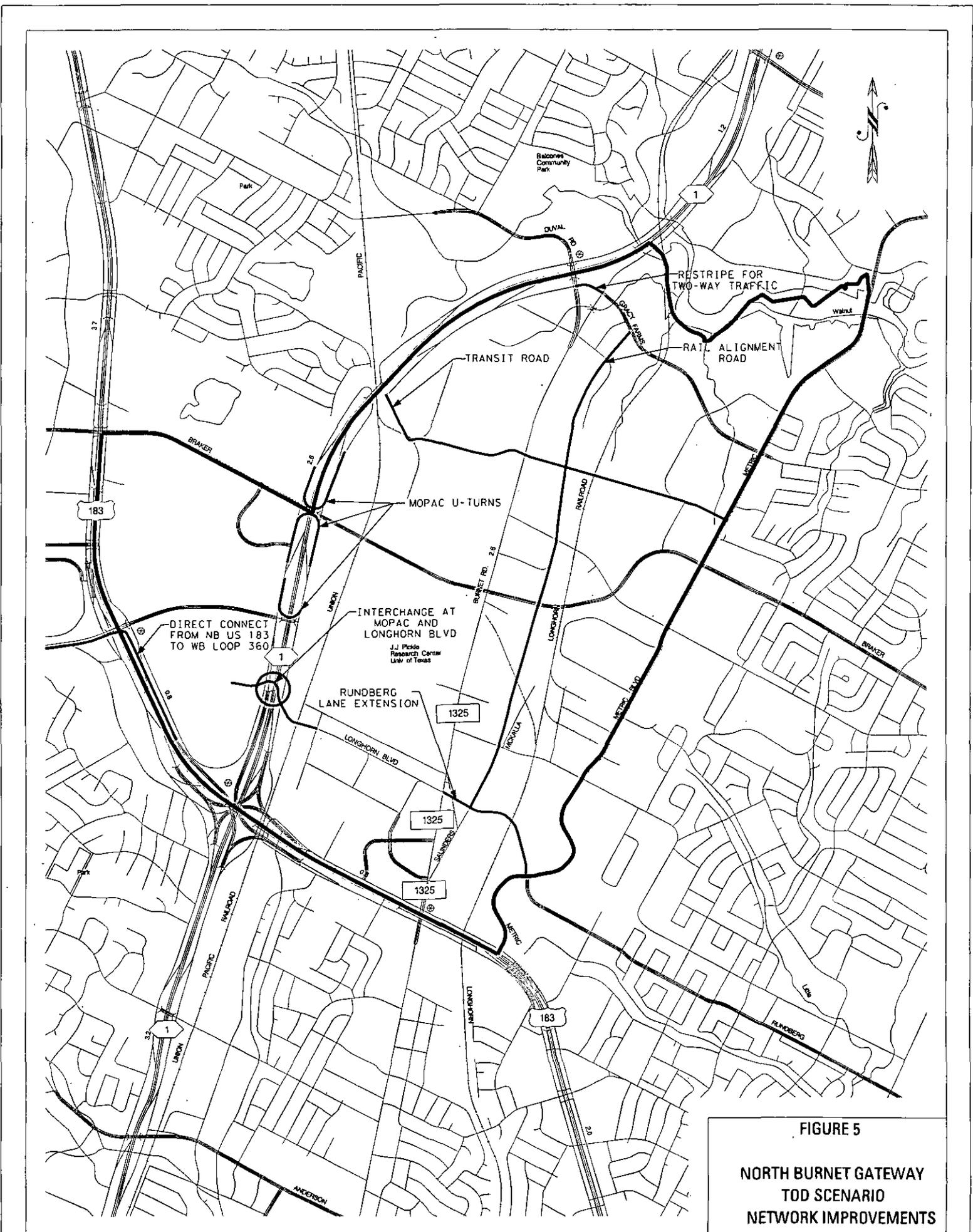


FIGURE 5
NORTH BURNET GATEWAY
TOD SCENARIO
NETWORK IMPROVEMENTS

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APPENDIX 3 AFFORDABLE HOUSING ANALYSIS



North Burnet/Gateway Planning Area Austin, Texas

Affordable Housing Analysis

**Prepared for:
City of Austin**

**Diana McIver & Associates, Inc.
June 30, 2007**

North Burnet/Gateway Planning Area Affordable Housing Analysis

This report provides an affordable housing strategy for the North Burnet/Gateway Plan area. Part 1 includes a description of existing City of Austin affordable housing programs and other affordable housing incentives and tools. Part 2 provides a description of the affordable housing goals in the North Burnet/Gateway Plan; an analysis of affordable housing needs based on potential redevelopment; and recommendations for incentives, policies and programs to achieve the affordable housing goals. This report also includes an analysis of the subsidies that may be needed to attain varying levels of housing affordability. The focus of this report is on multifamily and single-family attached developments, whether for sale or lease.

PART 1

I. Existing City of Austin Affordable Housing Programs and Initiatives

The City of Austin currently operates several programs directed at developers that are designed to stimulate affordable housing production. Because state law severely limits the use of mandatory inclusionary zoning in Texas, the City offers voluntary incentives and subsidies to promote the development of affordable housing. The City offers incentive-based programs that are intended to encourage development that meets several City goals, including the provision of affordable housing. S.M.A.R.T. Housing™ is the most prominent of these programs, as it is available to developers city-wide. The University Neighborhood Overlay, Transit-Oriented Development Districts, and Vertical Mixed Use programs are only available to developers building in specific geographic areas but provide incentive models that could be applied to the North Burnet/Gateway planning area. The Austin Housing Finance Corporation also offers direct subsidies to developers of rental housing through its Rental Housing Development Assistance (RHDA) program and to homeowners through its Down Payment Assistance Program.

A. S.M.A.R.T. Housing™

The City of Austin's S.M.A.R.T. Housing™ (Safe, Mixed-income, Accessible, Reasonably-priced and Transit-oriented) program is a city-wide initiative to promote the production of housing for low- and moderate-income families. In exchange for meeting the S.M.A.R.T. Housing™ standards, developers and builders receive incentives in the form of fee waivers and expedited development review.

The housing must meet the following criteria to qualify:

1. Safe. The development must comply with the City of Austin Land Development Code.

2. Mixed Income/ Reasonably Priced. One of the goals of the mixed-income strategy is to promote the dispersal of reasonably-priced units throughout the city. To meet this standard of the policy, at least 10% of the units in a development must be "reasonably-priced." A "reasonably-priced" housing unit is defined as one that is affordable to a family that earns no more than 80% of Austin's median family income.

Fees are waived on a sliding-scale basis, depending on how many units in a development are "reasonably-priced."

Affordability Requirements

10% Reasonably Priced
20% Reasonably Priced
30% Reasonably Priced
40% Reasonably Priced

Incentives

25% Fee Waivers & Expedited Review
50% Fee Waivers & Expedited Review
75% Fee Waivers & Expedited Review
100% Fee Waivers & Expedited Review

3. Accessible. Multifamily Developments should use HUD's Fair Housing Act Design Manual or the 2001 supplement to the 2000 International Building Code (IBC) when designing accessible units. In addition, the multifamily developments must meet the following requirements specific to the S.M.A.R.T. Housing™ program:

- 25% of all units must be located on the ground floor, or accessible by elevator;
- All ground-floor units must be adaptable;
- 10% of all units must be accessible;
- Accessible parking spaces must be provided;
- For developments in CBD and DMU zoning districts as well as Vertical Mixed Use (VMU) developments, 5% of the units must comply with the accessibility requirements of the adopted Building Code of the City.
- CBD, DMU and VMU developments are not required to locate 25% of the residential units on the ground floor.

4. Transit-Oriented. Multifamily developments are required to do the following:

- Coordinate with Capital Metro and locate within ¼ mile of a bus stop with peak service every 20 minutes or less;
- Provide accessible sidewalks connecting the development to nearby transit stops;
- Meet other transit-oriented design standards

5. Green Building. Developments must meet Austin Energy Green Builder minimum standards (one-star rating).

B. University Neighborhood Overlay (UNO)

In September 2004, the City of Austin adopted a new zoning overlay to promote dense residential development for certain areas west of the University of Texas campus. To achieve this objective, the University Neighborhood Overlay (UNO) provides incentives

to developers building high-density projects within the UNO boundary who choose to meet the UNO development requirements. Under the UNO provisions, multifamily developments are permitted in nonresidential base zoning districts.

Development incentives include waivers of density limits, minimum setbacks, minimum site area requirements, and impervious cover limitations for multifamily residential developments. The UNO ordinance also requires that, for developments utilizing these incentives, 10% of new multifamily residential units must be set aside for residents whose incomes are less than 80% of Austin's median family income (MFI), and that an additional 10% of new multifamily units must be set aside for residents with incomes at or below 65% MFI for a period of 15 years. The latter restriction can be waived by paying \$0.50 per square foot of net rentable floor area into the University Neighborhood District Housing Trust Fund.

The ordinance further promotes affordable housing by allowing multifamily developments to exceed height limits in exchange for affordable units. In areas of the UNO district that are otherwise restricted to lower height limits, multifamily developments may exceed maximum height restrictions by 15 feet in exchange for setting aside 10% of the units for residents at or below 80% MFI and an additional 10% for those at or below 50% MFI.

C. Transit Oriented Development Ordinance – Station Area Plans

The Austin City Council adopted the Transit-Oriented Development (TOD) Ordinance in May 2005. The TOD Ordinance is intended to promote a pedestrian-oriented, transit-friendly environment surrounding stations on the Austin segment of the commuter rail line between Leander and downtown Austin and park-and-ride facilities at the terminus of Rapid Bus lines.

Each Station Area Plan must include a set of possible strategies to meet the TOD affordable housing goal. The overall affordable housing goal in the TOD Ordinance and TOD Resolution (#20050519-009) is that 25 percent of all new housing units in each TOD district should be affordable. To be considered affordable, a new home or rental unit must be occupied by an income-qualified family that spends no more than 30% of its gross income on housing costs. The levels of affordability to be achieved are different for TOD Districts within the Community Preservation and Revitalization (CP&R) Zone.¹

The two TOD areas located in the CP&R Zone are Plaza Saltillo and Martin Luther King, Jr. Blvd., and the TOD Ordinance establishes goals of serving lower income groups in these TOD areas:

¹ The Community Preservation and Revitalization (CP&R) Zone is a program to promote economic and community development for the area bounded by IH-35 (from Manor Road to Riverside Drive), Riverside Drive (from IH-35 to State Highway 71), State Highway 71 (from Riverside Drive to US Highway 183), US Highway 183 (from State Highway 71 to Manor Road), and Manor Road (from US Highway 183 to IH-35). The goals of the program are to support affordable housing and small business development within the zone.

- All of the affordable homeownership units in these Districts should be targeted to families at or below 60% MFI;
- Rental units should be affordable to families with incomes at or below 50% of MFI. The specific affordability goals for the rental units in these TOD Districts are:
 - 5% of the units affordable to families at or below 30% MFI;
 - 10% of the units affordable to families at or below 40% MFI; and
 - 10% of the units affordable to families at or below 50% MFI.
- These goals become requirements if the station area plan increases maximum building height over that allowed by zoning prior to adoption of the plan.

For TOD Districts located outside of the CP&R Zone, the following affordable housing goals apply:

- Rental units should be affordable to families at or below 60% MFI. The specific rental affordability goals for these TOD Districts are:
 - 5% of of rental units should be affordable to families at or below 30% MFI
 - 20% of units should be affordable to families in the 40 - 60% MFI range.
- Owner-occupied units should be affordable to families with incomes at or below 80% MFI. The specific homeownership goals for these TOD Districts are:
 - 5% of the homes should be affordable to families at or below 60% MFI;
 - 10% of the homes should be affordable to families between 60% and 70% MFI;
 - 10 percent of the homes should be affordable to families between 70% and 80% MFI.

D. Vertical Mixed Use (VMU)

On August 31, 2006, the Austin City Council adopted new Design Standards, including regulations specific to Vertical Mixed Use (VMU) buildings. In order to be eligible for flexible development standards (dimensional and parking exemptions), the residential units in a VMU building must meet the affordability requirements listed below.

- Ownership: 5% of units occupied by households at or below 80% MFI and 5% of units occupied by households at or below 100% MFI. Condo fees must be included when determining the affordability of a unit. Affordability must be maintained for 99 years.
- Rental: 10% of units occupied by households at or below 80% MFI. Neighborhoods may request that a deeper affordability requirement, as low as 60% MFI. Affordability must be maintained for 40 years.
- For a development, the City may elect to subsidize up to 10% of the rental units for any MFI level, and/or may elect to exercise a right-of-first-refusal for the purchase of up to 10% of the homeownership units.

- Buildings containing upper-level nonresidential space must pay a fee-in-lieu of providing affordable rental units. This fee will be set by City Council. Fees paid will be used within the area of the city from which they were collected.
- All affordability restrictions run with the land, and long-term affordability of VMU homeownership units will be secured with the Community Land Trust model.

On June 7, 2007, the City Council amended the S.M.A.R.T. Housing Resolution to allow developers of VMU projects to apply for S.M.A.R.T. Housing benefits in exchange for meeting Green Building standards and providing increased accessibility requirements, in addition to meeting the affordability standards required of those VMU developments that utilize the dimensional and parking standards exemptions.

E. Existing Available Subsidies—Federal and Local

1. Rental Development Subsidies

The City of Austin's primary program for assisting the development of multifamily housing is the Rental Housing Development Assistance (RHDA) program. The RHDA program is administered by the Austin Housing Finance Corporation (AHFC) and is funded by a combination of local and federal financing sources: Local sources of funding for the RHDA program are the citywide Housing Trust Fund and the University Neighborhood Overlay Housing Trust Fund. The citywide Housing Trust Fund is currently supported by a \$1,000,000 yearly allowance from the City's general fund. Fees collected from developers paying the fees-in-lieu of providing affording housing under the UNO incentive program are the source of funds for the University Neighborhood District Housing Trust Fund. The bulk of the funds available under the RHDA program are federal and include HOME Investment Partnerships Program (HOME) and Community Development Block Grant (CDBG) funds from the U.S. Department of Housing and Urban Development.

Developers that intend to build rental units may apply to the RHDA program for acquisition, construction, or rehabilitation funds. Developers often use RHDA funds as a source of gap financing for affordable multifamily projects primarily financed with other programs, such as Low Income Housing Tax Credits. (A description of the LIHTC program is provided in Section II, Part E) or Multifamily Mortgage Revenue Bonds.

The affordability requirements for projects that utilize RHDA funds differ depending on the original source of the funds. Because projects can have a mix of RHDA-assisted units and non-assisted units, the affordability requirements below apply only to the assisted units.

- Projects that receive funds from the University Neighborhood Overlay Housing Trust Fund must have 20% of assisted units affordable to households with incomes at or below 50% of MFI for a 20-year period.
- Projects that receive HOME funds require that at initial occupancy, 20% of assisted units are affordable to renters who earn 50% MFI or less, 70% of assisted units are affordable to renters earning 60% MFI, and 10% of assisted units are affordable to

renters earning 80% MFI. Rents must comply with "Low HOME" and "High HOME" rents as set by HUD. Over the long term, the project must make 20% of assisted units affordable to those with incomes at or below 50% MFI, and 80% affordable to those earning 80% MFI or less.

- Projects that receive HTF dollars must make all assisted units affordable to renters with annual incomes at or below 50% MFI.

For units intended for renters earning 50% MFI or less, the RHDA program defines affordable rent as paying no more than 30% of the annual adjusted income. For renters earning between 60% and 80% of MFI, the RHDA program defines affordable rent as the lesser of 30% of the annual adjusted income for households at 65% of MFI or Section 8 Fair Market Rents, as established by HUD.

Projects that receive HOME or HTF funds have an affordability period of between 5 and 20 years, depending on the amount of funds a project receives. Additional program requirements apply regardless of a project's funding source.

2. Homeownership Development Subsidies

Acquisition and Development Program

The AHFC Acquisition and Development program works with lenders, developers and home builders to leverage City and Federal funds for the acquisition and development of lots, the acquisition and rehabilitation of structures, and the construction of new housing, all for sale to income-eligible homebuyers.

Under this program, the AHFC provides financing (loans and grants) for affordable housing development. In some cases, the AHFC acts as a joint venture partner with non-profit and for-profit developers to create affordable housing opportunities. All new construction is required to meet S.M.A.R.T. Housing™ criteria. Current Acquisition and Development projects include the Frontier at Montana subdivision in the Montopolis Neighborhood. All 81 homes to be built in the subdivision will be sold to households earning 80 percent MFI or less. The homes will be constructed by AHFC, non-profit housing providers, and other qualified builders. Sixteen of the AHFC-built homes will be sold under the Community Land Trust model for greater affordability.

Down Payment Assistance Program

The AHFC's Down Payment Assistance (DPA) program works directly with qualified first-time home buyers earning 80% or less of MFI. The DPA program provides up to \$10,000 in assistance to purchase a home, in the form of a zero percent interest, forgivable loan. Participants must also attend a home buyer education class provided by the City of Austin.

Mortgage Credit Certificate Program

The Mortgage Credit Certificate (MCC) program helps reduce the cost of homeownership for first-time homebuyers by providing an annual federal income tax savings of up to \$2000 per year for the life of the mortgage. The size of the annual tax credit is based on the amount of the mortgage:

- 30% of the annual interest paid on mortgage loans under \$115,000
- 25% of the annual interest paid on mortgage loans between \$115,000 and \$140,000
- 20% of the annual interest paid on mortgage loans between 140,000 and \$210,375

The maximum amount of the tax credit shall not exceed \$2,000 per year. The MCC will be in effect for the life of the mortgage loan as long as the home is the buyer's principal residence. Income restrictions also apply to this program and it is accessed through a home buyer's primary mortgage lender.

The DPA Program may be used in conjunction with the MCC Program and an additional \$1000 is provided to buyers who qualify for this option.

HACA Homebuyer Assistance

The Housing Authority of the City of Austin (HACA), funded directly by HUD also provides a subsidy to first time homebuyers. The program is only open to those who have resided in public housing or participated in HACA's Housing Choice Voucher program for at least one year. HACA provides up to \$10,000 towards the purchase price of a home in the form of a forgivable loan. No monthly payments are required and repayment is deferred unless the resident sells, transfers, refinances or converts the home to a rental property in five years.

F. Affordable Housing Incentives Taskforce

In June 2006, the City Council directed the City Manager to assemble an Affordable Housing Incentives Taskforce consisting of stakeholders to "review, develop and recommend to City Council enhancements to the City's policies and procedures, including the S.M.A.R.T.™ Housing program, for providing incentives to builders to include on-site affordable housing in their developments or, secondarily, to dedicate resources for the development of off-site affordable housing in the downtown area." The Taskforce began meeting in July 2006, and provided its final recommendations in a report to the City Council in May 2007.

The report is in the form of a "white paper" expressing the consensus core values and policy recommendations of the stakeholders. The Taskforce examined best practices in affordable housing incentives in Austin and from around the country and conducted a basic evaluation of local development conditions. One of the biggest challenges of the Taskforce was to craft policy recommendations that could be successfully applied to all areas of the city and that would promote the geographic dispersion of affordable housing units across the city. The Taskforce recommended a variety of incentives, including density bonuses, development fee waivers, and expedited development review and permitting procedures for downtown developments and multi-family and single-family developments throughout the city.

On June 7, 2007, the City Council adopted an initial set of amendments proposed by the Taskforce and directed staff to return to Council for adoption of additional recommendations following input from stakeholders and appropriate Boards and Commissions.

II. Other Affordable Housing Incentives/Tools

In addition to the existing housing programs in Austin, other housing tools that may be appropriate for this planning area include public/private partnerships, community land trusts, and General Obligation Bond Affordable Housing funds. An understanding of other tools available to the City is useful when evaluating their potential applicability in the North Burnet/Gateway plan area.

A. Public/Private Partnerships

As evidenced by the 2006 Bond Election, the City of Austin has taken the position that affordable housing should be considered an amenity that provides a public benefit, like parks or libraries. Because the benefits of providing affordable housing are so widespread, the City should seek participation from a variety of jurisdictions, including the county and the school district.

Joint Ventures

The City of Austin has previously been successful in developing affordable housing by entering into joint ventures with private entities. The Austin Housing Finance Corporation (AHFC) and Campbell Hogue and Associates, a private developer and builder, jointly developed a 160-unit apartment complex called Villas on Sixth Street using nine percent Housing Tax Credits awarded by the Texas Department of Housing and Community Affairs. The development is comprised of a total of 160 apartment units, of which 136 are affordable. Of the rent-restricted units, 60 units are set aside for residents with incomes at or below 40% MFI, and 76 units are for residents at or below 50% MFI. The development also includes 2,300 square feet of retail.

As is typical of housing tax credit developments, Villas on Sixth Street is owned by a limited partnership. To participate in this venture, the AHFC board (i.e. the Austin City Council) authorized the creation of a nonprofit corporation solely controlled by AHFC. This new nonprofit corporation is the sole general partner of the limited partnership. MMA Financial is the limited partner, and Campbell Hogue and Associates is a special limited partner of the ownership entity. AHFC also owns the land upon which the Villas on Sixth was built and leases it to the limited partnership via a long-term ground lease, which allows the property to take advantage of AHFC's tax-exempt status. Although AHFC was instrumental in purchasing the land and providing gap financing for the project, the entity relied on the experience of its co-developer, Campbell Hogue and Associates, to take the lead in the development and construction process. AHFC also has a right of first refusal to purchase the limited partner's interest at the end of the 15-year affordability compliance period.

Use of Publicly-Owned Lands

In many parts of Austin, the high cost of land has become a significant barrier to the development of affordable housing. For this reason, increased participation from public entities will be necessary to enable the development of affordable housing, especially in areas of town experiencing rapid growth and appreciation of land values. It may be

necessary to expand the use of publicly-owned lands for the location of affordable housing, just as these properties might be considered for parks and other public utilities. By removing or reducing the cost of land, affordable housing developments become more financially feasible have the potential to serve lower income levels.

AHFC has participated in several affordable housing developments with nonprofit owners/developers by assisting in the land acquisition. For example, Oak Springs Villas, a senior housing community, was built on a site that was City surplus land. The developer and owner, Volunteers of America-Texas, has a 75-year lease on the property and pays AHFC a nominal sum for its use. In a similar relationship, AHFC purchased an extended-stay hotel and leased it to Foundation Communities for a period of 99 years for a nominal sum. Foundation Communities then rehabilitated and converted the building to a single-room occupancy (SRO) rental property and is able to charge extremely low rents as a result of the partnership. These relationships also exist among single family developments. In another case with City surplus land, AHFC transferred ownership of an infill lot to Guadalupe Neighborhood Development Corporation (GNDC). GNDC built a duplex on the site and rents the units to two extremely low income families.

Assistance with land acquisition will be particularly important in the North Burnet/Gateway area, as redevelopment pressures could lead to significant inflation of land prices. Currently, the City's S.M.A.R.T. Housing™ policy gives AHFC the right of first acceptance of any surplus city properties for use as affordable housing. Although city departments may be reticent to declare some underutilized properties "surplus," these parcels could provide excellent opportunities for housing at a relatively low cost to the City. In the North Burnet/Gateway area, there are approximately 64 acres of City-owned land that have potential for redevelopment and could be considered for housing.

In addition to securing publicly-owned land for development, the City could assist developers by assembling and/or banking tracts of land for future use. In this case, the City could take advantage of opportunities to purchase tracts of land as they became available, even if an affordable housing developer for the site had not yet been identified.

B. Infrastructure Reimbursement

The development of infrastructure, such as roads, water and sewer lines, and drainage improvements, is another cost that can be especially cumbersome to developers of affordable housing. This may be an important consideration in areas where the City is promoting high-density redevelopment, because the existing infrastructure may not be adequate to support this new density. Currently, a developer must pay for any infrastructure upgrades necessary to serve the new development. The City of Austin can reduce the cost of building high-density affordable housing by reimbursing developers for the cost of upgrading inadequate infrastructure. This is consistent with the recommendations of the Affordable Housing Taskforce, which supported infrastructure reimbursement for affordable housing developments that meet the "core values" of deeper affordability, longer affordability, and geographic dispersion.²

² The City of Austin currently provides limited water and wastewater infrastructure reimbursement on a case-by-case basis for developments that provide additional capacity beyond the service needs of the development.

C. Height/Density Bonuses

The City of Austin is experimenting with height and density bonuses in other areas of the city where both density and affordable housing are encouraged. Increasing the allowable height or density gives the developer the opportunity to build more units on the same parcel of land, thereby reducing the per-unit cost of land. Height and density bonuses are available to developers under the University Neighborhood Overlay district and in the commercial corridors identified in the Vertical Mixed Use portion of the Design Standards. The Vertical Mixed Use component of the Design Standards are not yet in effect, but the UNO overlay has been in place since September 2004 and 253 units at 80% MFI and 73 units at 50% MFI have been approved through the S.M.A.R.T. housing certification process by the end of 2006.

D. Housing Tax Credits

The Low Income Housing Tax Credit program is administered by the U.S. Department of the Treasury and the Internal Revenue Service. The program, known in Texas as the "Housing Tax Credit" program, is the largest federal housing program in existence, in terms of number of units developed each year. Each state receives an annual allocation of tax credits from the Treasury, and the states then award the credits directly to owners of affordable housing. The Texas Department of Housing and Community Affairs is the agency responsible for administering the program in this state.

By providing a tax credit instead of a direct subsidy, the program relies on the investment of the private sector for the development of affordable housing. Owners of these affordable housing projects use the tax credits to reduce —dollar for dollar— their federal income tax obligations. The amount of credit awarded to a housing development is based on both the cost of the development and the percentage of low-income units in the development. The equity that an investor brings to a housing project typically equals between 50 and 70 percent of the value of the project. This greatly reduces the amount of debt financing that the a project will require and allows the owner to charge low rents.

In order to allow the flow of the tax credits to investors, the ownership is structured in the form of a limited partnership. Usually, the general partner will have a 0.1% interest and the limited partners (the investors) will have 99.9%. This allows the limited partners to get the major share of the tax credits, while making them liable only for the capital which they have committed to the project. The general partner assumes liability and total management of the property.

Housing tax credits can be used to develop both single family and multifamily rental housing, including single room occupancy (SRO) and other supportive housing developments. At the federal level, the program caps rents at either 50% MFI or 60% MFI, but the states layer additional affordability requirements based on local-priorities. TDHCA has created a scoring system that encourages developers to serve lower income families. Developers typically achieve these goals through the leveraging of additional subsidies, whether public or private.

E. Mortgage Revenue Bonds

Tax-exempt and taxable multifamily Mortgage Revenue Bonds (MRB) are debt instruments that can be used by both for-profit and nonprofit organizations for the acquisition and/or development of affordable rental units. MRB programs provide below-market interest rate funds for single-family homebuyers and multifamily mortgage loans made to qualifying recipients. Interest income from municipal bonds generally is exempt from federal, state, and local taxes. Interest rates on "tax-exempt" municipal bonds, therefore, are lower than interest rates on "taxable" bonds. This spread between tax-exempt and taxable bond interest rates creates the subsidy required to achieve and offer below-market interest mortgage rates.

The bonds are repaid by the revenue stream created by mortgage payments. Unlike general obligation bonds, mortgage revenue bonds are only repayable from the projects they finance, and the issuer is not liable for the bonds. Multifamily bonds automatically receive an allocation of housing tax credits (although at a lower value than the tax credits awarded through the competitive process). The coupling of housing tax credits with bonds reduces the total amount of debt required to finance a project, which allows the rents to be affordable.

The Austin Housing Finance Corporation, the Housing Authority of the City of Austin, the Travis County Housing Finance Corporation, and the Texas Department of Housing and Community Affairs all have the authority to issue bonds in Austin.

F. General Obligation Affordable Housing Bonds

Austin voters approved Proposition #5 of the City's November 2006 bond election, which proposed a \$55 million bond issue expressly for affordable housing. The ballot language reads as follows:

The issuance of \$55,000,000 in tax supported General Obligation Bonds and Notes for constructing, renovating, improving, and equipping affordable housing facilities for low income persons and families, and acquiring land and interests in land and property necessary to do so, and funding affordable housing programs as may be permitted by law; and the levy of a tax sufficient to pay for the bonds and notes.

These bonds provide funding for the creation, rehabilitation, and retention of affordable home rental and ownership opportunities. Rental housing development assistance programs would provide grants and loans to qualified entities for property acquisition; infrastructure design and development; and, construction and/or rehabilitation of rental housing, including special needs housing.³

³ City of Austin 2006 Bond Election brochure, City of Austin website.
<<<http://www.ci.austin.tx.us/bonds/>>>

Home ownership programs would provide grants and loans to qualified entities for acquisition, design, construction, infrastructure development and improvements to develop or re-develop land for affordable homeownership, including community land trusts.⁴

According to the Neighborhood Housing and Community Development Department, the intent is to set aside 60% of the bond proceeds for the Rental Housing Development Assistance (RHDA) program. These funds will go directly toward the production of rental housing. Funds will be targeted at units serving households at a maximum of 50% MFI, with an emphasis on reaching families at 30% MFI. These households are likely to include homeless, disabled, and elderly persons on fixed incomes, as well as low-wage earners.

The remaining 40% of the bonds will be directed at homeownership programs serving families at 50%-65% MFI. The target households include first-time homebuyers, working families, and elderly homeowners.

A Notice of Funding Availability (NOFA) for the first allotment of bond funds will be released in July 2007 and result in additional homeownership opportunities. The funds must be used for direct investment in housing developments. Although they may be used for "infrastructure design and development," the funds can only be used for on-site development costs.

G. Community Land Trust (CLT)

Community Land Trusts (CLT) preserve land for affordable housing and create permanent affordability. A CLT can be used to develop rental housing, but its real value is apparent when it is employed in homeownership scenarios. There are several models for the organization of a CLT, but in general, a nonprofit maintains ownership of the land set aside for affordable housing, and the homes are sold to qualifying households. The classic CLT model assumes that single-family homes are built on the land, but some condo models have been developed and some CLTs are exploring multifamily lease-to-purchase programs, as well. By removing the cost of land from the transaction, the upfront sales price of the home is greatly reduced. The CLT maintains affordability over time by retaining ownership of the land—only the building is bought and sold. The buyer signs a ground lease with the CLT for the use of the land and pays a nominal annual fee to the trust. The buyer also grants the CLT the right of first refusal to repurchase the structure when the homeowner is ready to move on. The sales price of the home back to the CLT or to another qualified family is based on a formula that includes the buyer's equity and a percentage of the profit from the appreciation of the structure. This allows the homeowner to build some equity while maintaining the home's affordability for the next family.

⁴ City of Austin 2006 Bond Election brochure, City of Austin website.
<<<http://www.ci.austin.tx.us/bonds/>>>

H. Tax Increment Financing District (TIF)

The State of Texas' Tax Increment Financing Act enables counties and municipalities to create Reinvestment Zones "to promote development or redevelopment of the area if the governing body determines that development or redevelopment would not occur solely through private investment in the reasonably foreseeable future." Revenue in the tax increment fund can be used for a variety of projects with public purposes, including affordable housing. Revenue generated by a TIF could not be funneled to a housing trust fund, but the TIF's governing board could establish rules setting aside a portion of the revenue in the tax increment fund for housing. More specifically, funds could be used for several eligible project costs related to the development of affordable housing in the North Burnet/Gateway area including land acquisition and assembly, construction of infrastructure, and the demolition, rehabilitation or new construction of buildings .

I. Role of Housing Trust Funds - What can a fee-in-lieu be used for?

Fee-in-lieu payments are generally deposited into local housing trust funds. The City of Austin currently has two housing trust funds dedicated to affordable housing. The University Neighborhood Overlay Housing Trust Fund assists projects which lie within designated boundaries west of the University of Texas campus. The fees-in-lieu which support the fund are paid by developers whose projects do not meet the minimum requirements for affordable housing set forth by the University Neighborhood Overlay Ordinance. The projects assisted by the UNO Housing Trust Fund must meet certain affordability requirements. The Austin Housing Finance Corporation manages the Fund, and distributes it through the Rental Housing Development Assistance Program (RHDA).

Austin's second affordable housing fund is the Housing Trust Fund and is currently supported by a \$1,000,000 yearly allowance from the City of Austin. This trust fund is exclusively used to assist new projects and is allocated to developers through the City's Rental Housing Development Assistance Program. Funds may be used for hard and soft costs related to a development, including property acquisition, construction, predevelopment and relocation costs as well debt relief that facilitates the development of a project. Because these funds are local, they are more flexible than federal dollars. Which cannot be used for debt relief. Currently, the RHDA program does not provide assistance to non-residential projects that may indirectly support affordable housing.

Other major cities, such as Boston, have similar systems for managing their fees-in-lieu. The fees go directly into trusts which assist affordable housing development and rehabilitation. The use of these funds is often limited to direct construction or rehabilitation costs.

Some cities have broader definitions of what it means to support affordable housing. San Diego's Housing Trust Fund (which includes fees-in-lieu) can be used for support of nonprofit developers, rental assistance, and administrative costs in addition to direct development costs⁵. The city code which outlines Oakland's housing trust fund

⁵ Affordable Housing Fund Fiscal Year 2006 Annual Plan, City of San Diego website.
<< <http://www.sdhc.net/pdfdocs/FY06AnnualPlanFinal.pdf>>>

specifically states that the City Manager may interpret the code as necessary to achieve the goal of affordable housing⁶. The Institute for Local Government studied California's local housing trust funds and determined that in order to maximize effectiveness of these funds, the goals of the funds must be clear however specific programs and uses should be flexible in order to allow adaptation to changes⁷.

J. Preserving Affordability Over the Long Term

Many affordable housing programs attach a development's affordability requirements to the land with restrictive covenants. A Land Use Restriction Agreement (LURA) outlining the property's restrictions, such as the number of affordable units, the maximum income or rent levels, the length of time that the affordability must stay in place, and any other program-specific requirements, is recorded on the property. The LURA can be tied to any sources of funding, such as housing tax credits or federal funds, which must then be repaid if the restrictions in the covenant are violated.

The affordability goals in a document like a LURA are tied to a percentage of the median income, which is updated annually. And as such, the eligible income limits identified in the LURA will change from year to year. For example, if a developer has promised to set-aside 10% of the units for families at 60% or below of MFI, then those units must always remain affordable to families at 60% of MFI, regardless of what that income is in a given year.

The various lengths of affordability periods by program are listed in the table below. For City of Austin programs not listed, the affordability period varies development by development or has not yet been determined.

Program	Rental	Homeownership
S.M.A.R.T. Housing TM	5 years	1 year
UNO	20 years	N/A
VMU	40 years	99 years
RHDA	5-20 years	N/A
Housing Tax Credits	30-40 years	N/A
CLT	Permanent	Permanent

⁶ Oakland Municipal Code Chapter 15.68.110, LexisNexis website.

<<<http://bpc.iserver.net/codes/oakland/>>>

⁷ Affordable Housing Trusts in California: Classifications and Best Practices, Institute for Local Government website. << <http://www.cacities.org> >>

PART 2

I. Goals of the North Burnet/Gateway Master Plan

One of the goals of the North Burnet/Gateway Master Plan is to create a new “town center” focused around rail stations planned for the area. The plan seeks to promote a pedestrian-friendly environment and higher density development. In order to be successful, the plan should provide for a variety of housing options, so that people of all income levels can live and work in the area.

It is a goal of the North Burnet/Gateway Plan to achieve a jobs-housing balance within the district. The development of new commercial space will spur the growth of businesses in the North Burnet/Gateway area, and these businesses will need to hire employees. Because the goals of the plan include creating a dense and vibrant employment center, with less reliance on automobiles, the plan will also require the development of a sufficient number of housing units to accommodate the people working in the area. And in addition to having the correct number of housing units, it is also important that the housing be affordable to the prospective employees. Affordable housing is important for the economic viability of a town center and to achieve the goals of a pedestrian-oriented district. Affordable housing located near employment centers provides the same benefits as market-rate housing, such as supporting the a stable workforce or improving air quality by reducing daily commuting times, but serves workers earning lower wages. But unlike market-rate housing, the market does not always provide housing for this wage sector.

II. How much affordable housing will be needed in the North Burnet/Gateway Plan area?

For the purposes of this analysis, the HUD-determined income limits by household size for the Austin Metropolitan Statistical Area (MSA), which are published by the City's Neighborhood Housing and Community Development Office annually, are used. A housing unit is considered affordable to a household if it is required to spend no more than 30% of its gross monthly income on utilities and mortgage or rental payments for the unit.

This analysis links the amount of commercial space that could potentially be developed to an estimate of the number of jobs created, based on the various industry types. The Department of Energy's Energy Information Administration estimates the number of square feet per employee per use, including common space. Based on these guidelines, the following numbers of square feet per employee by land use type have been estimated.

Land Use	Square Feet per Employee
Commercial Services	635
Retail, Destination	1,021
Retail, Neighborhood	1,020
Office	416
Industrial	1,398
Education	969
Hospitality	1,919
Civic Uses	1,396

A survey of commercial spaces in Austin and of the industries occupying each type of land use provide an indicator of the incomes of the employees in a given space. The Texas Workforce Commission publishes a distribution of occupations by industry type, which have been tied back to the land use types identified above. The mean wages published by the U.S. Bureau of Labor Statistics have been used to calculate an annual salary for each occupation. Based on the land uses proposed in the draft North Burnet/Gateway 2035 Master Plan Document, a salary distribution by land use category has been developed. Please note that these annual salaries assume 2,080 paid hours per year, when in fact, some jobs may not offer full-time employment.

This analysis assumes one person per job, and the wages paid per employee are compared to the estimated median income for one person in Austin. The 2006 Median Family Income for a four-person household in the Austin area is \$69,600. Although HUD does not publish a 100% MFI number for a single-person household, it is estimated to be approximately \$49,800.⁸ According to the City of Austin's Neighborhood Housing and Community Development Office, the various income limits for a single-person household are as follows:

30% MFI	\$14,950
50% MFI	\$24,900
60% MFI	\$29,850
80% MFI	\$39,850

Using the methodology described above, the distribution of incomes by each land use category have been calculated and shown in the table below. For example, based on the survey of commercial spaces in Austin, an estimated 65% of the occupations associated with the Hospitality land use pay a wage that puts a one-person household at an income equal to or greater than 30% MFI and equal to or below 50% MFI.

⁸ Novogradac & Company, LLP website, Rent and Income Calculator.
 <<www.novoco.com/products/rentincome.php>>

Income Distribution by Land Use Type

Land Use	≤30%	31-50%	51-60%	61-80%	>80%
Commercial Services	0.0%	0.5%	34.2%	51.5%	13.8%
Retail Destination	0.0%	15.1%	14.9%	63.1%	6.9%
Retail, Neighborhood	0.0%	23.0%	29.7%	39.5%	7.9%
Employment	0.0%	1.4%	27.1%	23.6%	48.0%
Industrial	0.0%	3.4%	53.0%	19.1%	24.4%
Education	0.0%	8.4%	8.5%	9.5%	73.6%
Hospitality	0.0%	64.6%	15.7%	8.1%	11.6%
Civic Uses	0.0%	33.1%	24.9%	19.9%	22.2%

The North Burnet/Gateway 2035 Master Plan Document projects an overall distribution for twelve land use categories. However, this analysis removes Transit Stations, Residential (attached), Residential (detached), and Open Spaces from the calculations, as it is assumed that very few, if any, employees will be associated with these land use types. The remaining land use categories and their projected square footages, based on the land area available and their corresponding floor-to-area ratios, are outlined in the table below.

Land Use Distribution

Land Use	Projected 2035 Yield Square Footage	
Commercial Services	3,437,112 SF	14.2%
Retail Destination	2,373,310 SF	9.8%
Retail, Neighborhood	1,715,995 SF	7.1%
Employment	9,024,449 SF	37.2%
Industrial	3,343,335 SF	13.8%
Education	1,991,460 SF	8.2%
Hospitality	1,695,448 SF	7.0%
Civic Uses	709,590 SF	2.9%
Total employment sq. ft.	24,290,699 SF	100%

The next step in determining the need for affordable housing in this area is to look at the income distribution by land use type as a share of the whole area. For example, Commercial Services comprises approximately 14% of the planned land use, and about 34% of the projected occupations in this land use will pay wages qualifying a single-person household between 50% MFI and 60% MFI. Therefore, occupations in

Commercial Services paying wages between 50% MFI and 60% MFI will amount to approximately 5% of the total employment in the North Burnet/Gateway Plan Area.

Summary Income Distribution

Land Use	≤30%	31-50%	51-60%	61-80%	>80%
Commercial Services	0.0%	0.1%	5.0%	7.6%	2.0%
Retail Destination	0.0%	1.0%	0.9%	4.0%	0.4%
Retail, Neighborhood	0.0%	1.1%	1.4%	1.8%	0.4%
Office	0.0%	0.8%	15.9%	13.9%	28.2%
Industrial	0.0%	0.2%	3.4%	1.2%	1.6%
Education	0.0%	0.5%	0.5%	0.5%	4.1%
Hospitality	0.0%	1.6%	0.4%	0.2%	0.3%
Civic Uses	0.0%	0.5%	0.3%	0.3%	0.3%
TOTAL	0.0%	5.6%	27.8%	29.4%	37.2%

In 2006, the average market-rate rents were affordable to families with incomes at 80% MFI. Thus, the number of housing units required for households at incomes below 80% is used when evaluating the need for affordable (below market-rate) housing.

Although the data appear to show that no housing units are required for households at incomes at or below 30% MFI, this is misleading because it assumes one employed person per household and no other household members. With the addition of a second non-worker in every household, approximately 3.5% of the total households would drop below the 30% threshold. Under this scenario, about 50% of the jobs in Hospitality would provide a household income below the 30% MFI income limit. Assuming larger household sizes and determining whether or not there are multiple workers in a given household will alter the outcome of this analysis at any income level, but this initial calculation provides a conservative estimate of the potential housing needs in this area.

**Two-Person Households with a Single Wage-Earner
as a Share of Total Employment**

Land Use	Two-Person Households at or Below 30% MFI
Commercial Services	0.0%
Retail Destination	0.9%
Retail, Neighborhood	1.0%
Office	0.1%
Industrial	0.1%
Education	0.1%

Hospitality	1.2%
Civic Uses	0.1%
Total	3.5%

Based on the estimated land use and employment distribution, approximately one-third of the jobs in the North Burnet /Gateway Master Plan area could pay salaries at or below 60% median income for a single person household. In order to support a jobs-housing balance in the area, affordable housing goals should be tied to the potential household incomes in the area. Specifically, the distribution of affordable housing ought to match the distribution of average incomes by occupation. Using this methodology, at least 6% of housing units in the area should be set aside for households at or below 50% MFI. Another 28% of the housing units in the area should be affordable to families earning between 50% MFI and 60% MFI, and at least 29% should be affordable for families between 60% MFI and 80% MFI. The following section of this report will recommend strategies to achieve these goals.

III. Strategies to Achieve Affordable Housing Goals

The North Burnet/Gateway 2035 Master Plan projects that the total build-out of the area could include nearly 42,000 total dwelling units. In order to maintain the jobs-housing balance over the next 30 years, approximately 2,500 housing units (6%) should be affordable to families at or below 50% MFI; 11,600 units (28%) at 60% MFI; and about 12,000 units (29%) at 80% MFI. The City will have to take advantage of all of the options available to it in order to achieve these levels of affordability.

A. Affordable Housing Price Gap

1. Rental Housing

According to Capitol Market Research, a survey of the 13 new market-rate apartment complexes that opened in 2006 in Austin reveals the following average rents by unit size:⁹

Efficiency	=	\$795
1 bedroom/1 bath	=	\$852
2 bedroomd/2 bath	=	\$1,135
3 bedroom/2 bath	=	\$1,379

This sample of rents is useful because these new market-rate apartments are probably comparable to the apartments that will be developed in the North Burnet/Gateway Plan

⁹ These rents are not stabilized and may include lease-up discounts and incentives. Actual stabilized rents may be higher.

area. As newly constructed developments, they are likely be similar, in terms of size and quality of the units and the amenities offered, to the units that will be built in this area.

Assuming the HUD formula of one person per bedroom plus one, and that a unit is affordable to a family if it is paying no more than 30% of its income toward rent and utilities, the rents (including utilities) in the table below are considered affordable for each maximum income limit.

Unit Size	≤30% MFI	31-50% MFI	51-60% MFI	61-80% MFI
Efficiency	\$373	\$622	\$747	\$996
1 Bedroom	\$426	\$711	\$853	\$1,138
2 Bedroom	\$480	\$800	\$960	\$1,280
3 Bedroom	\$533	\$814	\$1,066	\$1,422

The average rents of new apartments placed in service in 2006 are affordable to families at 80% MFI, but are not affordable to families at any lower income level. Incentives and subsidies may need to be offered to developers in order to reach the rents affordable to lower income levels.

One of the considerations in the development of affordable housing is the degree of incentive or subsidy needed to make a housing unit affordable. The following table provides an example of how much subsidy (either in actual dollars or through indirect development cost benefits) is needed to reduce the actual rent so that it would be affordable by a family at certain income levels in 5% increments. In this example, debt service on the unit is assumed to be at an interest rate of 7.5% amortized over 20 years. Essentially, it takes \$10,000 per unit in subsidy to reduce the affordability of the unit by 5%. If a rent is affordable to a family at 80% of MFI, then \$40,000 in development incentives or subsidy is needed to make this same unit affordable to a family at 60% of MFI.

Subsidy per Unit Needed to Achieve Income Targeting for Rental Units¹⁰

Subsidy per Unit	2BR Rent	Rent Level
\$0	\$1,280	80% MFI Rent
\$10,000	\$1,200	
\$20,000	\$1,120	
\$30,000	\$1,040	
\$40,000	\$960	60% MFI Rent
\$50,000	\$880	
\$60,000	\$800	50% MFI Rent

An estimated 14,100 housing units (34% of total units) should be affordable to families at 50% and 60% MFI in this area in order to maintain the jobs- affordable housing balance. The market currently provides rental housing that is affordable to families at 80% MFI and higher, but in order to reach families at lower incomes, significant subsidy will be

¹⁰ Assumes \$10,000 of debt amortized for 20 years at 7.5% equals \$80 monthly payment.

required. With a subsidy of \$60,000 per unit, developers would be able to provide units at 50% MFI, and with a subsidy of \$40,000 per unit, 60% MFI is attainable.

Affordability Target	Percent of Total Units	Estimated Number of Units	Subsidy/Unit
50% MFI	6%	2,500	\$60,000
60% MFI	28%	11,600	\$40,000
80% MFI	29%	12,000	\$0

2. Homeownership

The same principal applies to for-sale housing, in that reducing the sales price of a home by roughly \$10,000 makes it affordable to a family at an income level 5% lower. The following table shows approximate home sales prices affordable to families at 60% MFI and 80% MFI.

Home Sales Prices¹¹

Size	60% MFI	80% MFI
1-bedroom	\$53,500	\$93,000
2-bedroom	\$70,500	\$116,000
3-bedroom	\$87,500	\$139,000

According to recent data provided by Capitol Market Research, the 2006 median townhouse or condominium sales price was \$150,000, and the average sales price was even higher at \$180,158. The average size of these units is 1,201 square feet. Both the median and the average sales prices are well above the price points that families at 80% MFI can afford. In order to bring these housing costs down to levels that low- and moderate-income families could afford, subsidy or development incentives would be required. The following subsidy calculations are based on the gap between the 2006 median townhouse/condominium sales price and a 2-bedroom unit affordable to families at 60%MFI or 80% MFI level. This also assumes that no homeownership units are affordable to families at incomes much lower than 60% MFI. In order to achieve an affordable sales price on a 2-bedroom condo, nearly \$80,000 per unit in subsidy is required to reach a family at 60% MFI, and \$34,000 in subsidy is required to make a unit affordable to a family at 80% MFI.

¹¹ Assumes one person per bedroom; 5% down payment; \$410 for taxes/insurance; 7% interest rate; 30-year amortization. Paying no more than 30% of income towards housing cost.

Affordability Target	Percent of Total Units	Estimated Number of Units	Subsidy/Unit
60% MFI	28%	11,600	\$79,500
80% MFI	29%	12,000	\$34,000

These models provide rough calculations of the amount of subsidy that could potentially be required to reach affordability for both rental and homeownership units. In reality, there will likely be a mix of unit types and a mix of rental and homeownership units, and the amount of subsidy needed to meet affordable housing goals would vary accordingly. Other factors, such as the number of employees anticipated in the area, may vary over time, so the amount of subsidy needed to maintain the jobs-housing balance may also change.

B. Recommendations

A number of different strategies may be employed to provide the subsidy needed to ensure that below-market rate rental prices and home sales prices are available for families with incomes at or below 80% MFI. These include development incentives or programs that either reduce the cost of development (e.g. fee waivers, infrastructure reimbursement, Housing Tax Credits), increase the number of market-rate units that could be developed to offset the cost of providing lower-priced units (e.g. height/density bonuses for affordable housing), or direct subsidy either through donation of land (community land trust or publicly-owned land) or funds for affordable housing. Recommended strategies for the North Burnet/Gateway area are outlined below.

1. Development incentives are of great value to developers. The City's existing programs, such as the S.M.A.R.T. Housing™ incentives and the RHDA program subsidies, will continue to be important tools in the effort to promote the development of affordable housing; however, in order to reach lower levels of affordability, it may be necessary to use these programs in conjunction with other affordable housing tools. The City's limited resources will go farther when layered with other sources of financing. For example, a single development may be eligible for both S.M.A.R.T. Housing™ incentives and RHDA funds, which could be leveraged to secure financing from another program, such as housing tax credits.

The City should continue to offer S.M.A.R.T. Housing™ incentives and should also consider increasing the value or the number of incentives offered under this program. For example, the City could provide additional fee waivers or expedited permitting and inspections processes to developers in exchange for including some affordable housing in their developments. The City has had a successful track record with this program, and could stimulate even more housing with a stronger program, perhaps even targeted specifically at this area.

2. Density bonuses are another tool that can be used to develop affordable housing at a relatively low cost to the City. Developers may find value in additional height or FAR that can offset the cost of providing lower cost units. By building more units on a single site, a developer can increase the return on the land. For example, with a 25% bonus a developer could build 125 housing units on a site that would otherwise be limited to 100 units. In exchange for this benefit, the City would require that a portion of the units be affordable. The level of affordability reached and the number of affordable units may vary depending on the specific project. For example, if a project were able to serve lower income limits, then it would be required to provide fewer affordable units than another project serving families at higher incomes.

Developers should also have the option of paying a fee, instead of providing affordable housing units on site, in exchange for any of the development incentives described above. The City of Austin has already developed several fee-in-lieu models, such as the one in used in the University Neighborhood Overlay (UNO). The City should evaluate the effectiveness of the existing fee-in-lieu programs and calibrate the fee in this area accordingly. The fee should be high enough that developers will be encouraged to build units on site when possible. And like the fees in the UNO program, the fees would be paid to a housing trust fund whose proceeds could only be used for the development of affordable housing in the North Burnet/Gateway Plan area.

3. The City has already given AHFC the right of first acceptance on any surplus city properties to evaluate whether or not they might be suitable sites for housing. But because some city departments may be reticent to declare properties "surplus," AHFC should make an effort to work with other departments to identify potential housing sites. These parcels could provide excellent opportunities for housing at a relatively low cost to the City. There are approximately 66 acres of publicly-owned land in the North Burnet/Gateway area.

In addition to securing publicly-owned land for development, the City could assist developers by assembling and/or banking tracts of land for future use. In this case, the City could take advantage of opportunities to purchase tracts of land as they became available, even if an appropriate affordable housing developer for the site had not yet been identified.

4. Community Land Trusts have been successful at helping to preserve long term affordability in other communities that have experienced significant appreciation of real estate values. Although a CLT has not yet been created in Austin, members of the community, including both representatives of the City and local nonprofit organizations, have had discussions about creating one. In particular, the City has expressed an interest in forming a CLT as part of the redevelopment at Robert Mueller Municipal Airport (RMMA). The CLT may be formed by the City alone or, more likely, in partnership with local nonprofit organizations. A single city-wide CLT could be created or separate CLTs could be formed for each of the different geographic areas.

5. The City should consider committing funds for affordable housing to the North Burnet/Gateway Plan area. The City's existing sources of financing available to affordable housing developers in the area are limited to the City's allocation of federal

funds and the city-wide housing trust fund. These resources are small in relation to the amount of funding that may be needed. Because the City is interested in promoting redevelopment in this area, it should consider setting aside a portion of the \$55 million in affordable housing general obligation bonds to spur initial investment and housing development in the area.

6. One important key to planning for housing will be to encourage a variety of housing types. Apartments, condominiums, townhouses, accessory units, etc. should all be included in the housing plan. A good mix of unit types will ensure that a broader range of household types and income levels can be served in this area. Although an estimate of approximately two persons per household has been developed for the master plan, housing that includes some options for both smaller and larger households should be developed.

7. And along these same lines, housing for seniors should also be included in the North Burnet/Gateway Plan area. By using the jobs-housing balance as the driving factor in determining housing needs, seniors who are much less likely to be working, are left out of the calculation. A densely developed area like this, with easy access to transit and services, would be an ideal location for senior housing. The proposed housing types are also a good match for elderly households, which are typically smaller than younger families and who tend to own fewer cars. And in general, multifamily housing is attractive to seniors for its relative safety, convenience and low maintenance.

It will be a challenge to meet the projected affordable housing need in the North Burnet/Gateway Plan area, and the City should consider offering a number of incentives, ranging from additional development entitlements and fee waivers that help offset this cost for developers to providing a portion of city-owned land or cash subsidies for affordable housing. No single solution will solve the affordable housing need, so it will be important to create a regulatory environment that encourages housing and implement creative solutions to make the housing affordable.